

Appendix E

DESIGN REPORT
ANNEXATION AREA 1
WEST OF I-95
CITY OF ROCKY MOUNT, NC
PREPARED BY ANTHONY MANCARI, P.E.
JULY, 2008

1.0 GENERAL:

Annexation Area 1 is located on the western boundary of the city limits, west of I-95 within the Maple Creek, Sapony Creek and Stony Creek drainage basins, all of which discharge to the Tar River upstream of the Rocky Mount Mills Dam.

2.0 ANNEXATION AREA 1:

Location/Legal Description: The following description of Annexation 1 is taken from the official GIS system of the City of Rocky Mount, NC.

Beginning at the intersection of the south east right of way of Sunset Ave and Old Carriage Road, (having state plane coordinates 810245.609,2326593.172) thence along the southern right of way of Sunset N 87°21'53" E 281.14 feet to a point with the western property line for The Village in Westry said point being in the existing city limits of the city of Rocky Mount; thence with the existing city limit line the following courses and distances, along the western property line for The Village in Westry S 4°40'4" W 470.75 feet to a point in the western property line for Westry Crossing; thence along the western property line for Westry Crossing S 4°40'4" W 233.58 feet to a point; thence cornering N 85°39'15" W 264.76 feet to a point in the eastern right of way of Old Carriage Road; thence the eastern right of way of Old Carriage Road the following courses and distances S 4°30'7" W 469.02 feet to a point; thence S 4°43'40" W 40.04 feet to a point; thence S 5°58'46" W 129.59 feet to a point; thence S 5°13'39" W 20.11 feet to a point; thence S 8°1'14" W 60.86 feet to a point; thence S 9°56'55" W 79.78 feet to a point; thence S 11°47'7" W 71.76 feet to a point; thence S 12°42'30" W 226.00 feet to a point; thence S 77°46'29" E 5.34 feet to a point; thence S 13°15'45" W 492.99 feet to a point; thence S 13°17'2" W 53.36 feet to a point; thence S 13°17'2" W 58.47 feet to a point; thence S 13°15'12" W 133.94 feet to a point in the Carriage Pond subdivision; thence along the property line for the Carriage Pond subdivision S 77°57'21" E 296.53 feet to a point; thence cornering and along the property line for the Carriage Pond subdivision the following courses and distances thence S 12°27'49" W 94.99 feet; thence N 89°59'43" W 2.50 feet; thence S 13°40'23" W 300.59 feet to a point in northern right of way for Nash County Railroad; thence along the northern right of way for Nash County Railroad S 77°37'54" E 2267.15 feet to a point in the eastern property line for Westry Crossing subdivision; thence cornering and along the eastern property line for Westry Crossing subdivision the following courses and distances N 4°8'40" W 394.70 feet to a point; thence S 86°4'11" E 15.41 feet to a point; thence N 6°22'58" W 2894.63 feet to a point in the southern right of way of Sunset avenue; thence along the southern right of way of Sunset avenue the following courses and distances S 71°18'3" E 26.22 feet to a point; thence S 67°50'47" E 135.65 feet to a point; thence S 66°13'8" E 108.19 feet to a point in the western property line of Dennis B & Deborah G

Williams (deed book 1121, page 681); thence along in the western property line of Dennis B & Deborah G Williams S 28°5'20" W 204.95 feet to a point; thence cornering S 15°37'38" E 27.84 feet to a point; thence cornering S 82°40'55" E 119.73 feet to a point; thence cornering N 26°57'20" E 188.62 feet to a point the southern right of way of Sunset avenue; thence along the southern right of way of Sunset avenue S 64°46'58" E 11.88 feet to a point with the intersection of the property line for Clifton Price Harper Jr (deed book 1846, page 112); thence along of the property line for Clifton Price Harper Jr the following courses and distances thence S 7°1'26" E 1032.44 feet to a point; thence S 66°49'34" E 379.90 feet to a point; thence S 15°28'24" E 398.25 feet to a point; thence S 68°36'31" E 556.06 feet to a point; thence S 6°25'3" E 326.55 feet to a point in property line of Dennis B & Deborah G Williams (deed book 1121, page 681); thence along the property line of Dennis B & Deborah G Williams S 78°50'42" E 221.94 feet to a point in the western right of way of I 95; thence along the western right of way of I 95 the following courses and distances S 21°44'26" W 1268.91 feet to a point; S 21°34'46" W 131.87 feet to a point; thence S 21°49'19" W 1616.12 feet to a point in the property line for Old Carriage Ventures LLC (deed book 2118, page 363); thence along the property line for Old Carriage Ventures LLC the following courses and distances N 27°27'36" W 17.89 feet to a point; thence N 16°12'5" W 26.92 feet to a point; thence N 10°57'14" W 3.95 feet to a point; thence N 57°1'8" W 14.09 feet to a point; thence N 25°23'57" W 19.46 feet to a point; thence N 34°41'42" W 3.95 feet to a point; thence N 33°52'42" W 21.20 feet to a point; thence N 44°38'38" W 7.12 feet to a point; thence N 36°58'44" W 177.21 feet to a point; thence N 42°29'56" W 19.24 feet to a point; thence N 37°38'49" W 128.32 feet to a point; thence N 39°8'51" W 110.13 feet to a point; thence N 34°52'4" W 141.70 feet to a point; thence N 34°5'29" W 158.39 feet to a point; thence N 21°54'21" W 12.74 feet to a point; thence N 7°18'20" W 9.83 feet to a point; thence N 13°19'28" W 9.78 feet to a point; thence N 24°51'14" W 12.71 feet to a point; thence N 24°36'13" W 20.49 feet to a point; thence N 11°13'50" W 88.80 feet to a point; thence N 6°6'0" W 32.96 feet to a point; thence N 14°28'13" W 8.00 feet to a point; thence N 20°8'37" W 15.25 feet to a point; thence N 32°4'55" W 19.78 feet to a point; thence N 57°18'47" W 8.91 feet to a point; thence N 69°52'59" W 34.37 feet to a point; thence N 63°37'40" W 33.21 feet to a point; thence N 59°55'30" W 51.17 feet to a point; thence S 74°17'28" W 10.52 feet to a point; thence N 71°10'31" W 8.75 feet to a point; thence N 54°10'18" W 16.06 feet to a point; thence N 63°26'5" W 15.65 feet to a point; thence N 78°51'57" W 23.95 feet to a point; thence N 83°25'44" W 432.42 feet to a point; thence N 85°51'45" W 78.45 feet to a point; thence N 85°39'42" W 131.61 feet to a point; thence N 85°21'52" W 18.56 feet to a point; thence N 71°36'54" W 90.89 feet to a point; thence N 63°4'40" W 8.97 feet to a point; thence N 57°44'23" W 71.89 feet to a point; thence N 70°6'18" W 66.08 feet to a point; thence N 53°7'48" W 6.87 feet to a point; thence N 55°22'33" W 6.38 feet to a point; thence N 71°7'39" W 80.17 feet to a point; thence N 62°35'5" W 62.72 feet to a point; thence S 28°7'43" W 683.35 feet to a point; thence N 62°19'23" W 1411.80 feet to a point in the eastern right of way of Old Carriage Road; thence along the eastern right of way of Old Carriage Road S 27°16'57" W 803.42 feet to a point; thence continuing S 27°19'12" W 1757.30 feet to a point in the southern property line for Nash Central High School; thence along the property line for Nash Central High School the following courses and distances S 85°40'3" E 10.76 feet to a point; thence N 61°35'36" E 10.11 feet to a point; thence S 51°35'21" E 67.39 feet to a point; thence S 89°24'29" E 18.89 feet to a point; thence N

27°48'57" E 33.45 feet to a point; thence N 39°31'17" E 4.27 feet to a point; thence N 76°6'59" E 44.81 feet to a point; thence N 88°32'37" E 16.95 feet to a point; thence S 33°24'17" E 3.61 feet to a point; thence S 15°17'10" W 23.66 feet to a point; thence S 1°39'17" W 4.11 feet to a point; thence S 24°26'37" E 24.07 feet to a point; thence S 73°38'2" E 10.97 feet to a point; thence N 87°15'32" E 21.54 feet to a point; thence N 75°14'28" E 20.20 feet to a point; thence N 76°48'20" E 53.92 feet to a point; thence N 86°15'55" E 4.31 feet to a point; thence S 85°23'3" E 18.55 feet to a point; thence S 85°23'3" E 22.44 feet to a point; thence S 82°49'18" E 6.65 feet to a point; thence N 67°6'48" E 10.52 feet to a point; thence N 82°49'18" E 27.13 feet to a point; thence S 3°30'27" W 8.85 feet to a point; thence S 13°56'10" W 8.06 feet to a point; thence S 10°13'20" E 8.25 feet to a point; thence S 37°21'39" E 4.42 feet to a point; thence S 74°47'39" E 4.66 feet to a point; thence N 80°28'6" E 8.83 feet to a point; thence N 66°21'50" E 13.45 feet to a point; thence N 37°29'15" E 8.97 feet to a point; thence N 46°58'2" E 7.11 feet to a point; thence N 55°0'57" E 4.16 feet to a point; thence N 81°47'49" E 7.48 feet to a point; thence S 74°55'44" E 5.48 feet to a point; thence S 84°35'53" E 8.94 feet to a point; thence N 66°8'13" E 4.16 feet to a point; thence N 70°40'43" E 12.86 feet to a point; thence N 66°4'21" E 8.58 feet to a point; thence S 86°56'39" E 4.10 feet to a point; thence S 52°50'35" E 5.00 feet to a point; thence S 61°13'28" E 115.74 feet to a point; thence N 86°26'21" E 234.62 feet to a point; thence N 17°53'43" E 99.67 feet to a point; thence N 73°52'20" E 173.12 feet to a point; thence S 69°13'25" E 137.94 feet to a point; thence N 81°19'27" E 184.93 feet to a point; thence S 46°42'13" E 49.96 feet to a point; thence S 46°42'13" E 17.21 feet to a point; thence S 54°45'53" E 304.36 feet to a point; thence S 68°21'39" E 65.08 feet to a point; thence N 63°37'9" E 48.22 feet to a point; thence S 66°39'50" E 78.91 feet to a point; thence N 62°12'25" E 110.25 feet to a point; thence S 47°11'47" E 65.28 feet to a point; thence N 88°44'35" E 37.31 feet to a point in the property line for Windsor Hall subdivision and the north west property corner for Daniel Lee Pridgen (deed book 1139, page 430); thence leaving the existing city limit line and along the Pridgen property line S 0°58'41" W 2796.79 feet to a point in the northern right of way of Old Carriage Road; thence along the northern right of way of Old Carriage Road and across Yorkshire lane N 76°15'33" W 451.85 feet to a point; thence cornering and across Old Carriage Road to a point in the southern right of way S 1°12'7" W 61.73 feet a common corner for Country Lane Subdivision and Eliam T & Margaret P Hoyle (Deed book 1869, page 662); thence along the Country Lane Subdivision line S 0°44'45" W 1568.77 feet to a point; thence cornering and continuing S 89°42'14" E 685.50 feet to a point; thence S 82°22'41" E 230.07 feet to a point in the western right of way line of I 95; thence along the right of way of I 95 and Country Lane Subdivision S 31°5'55" W 1248.04 feet; thence cornering with Country Lane Subdivision N 89°32'39" W 1220.66 feet to a point; thence cornering N 1°26'10" E 2872.69 feet to a point in the southern right of way of Oak Level Road; thence across Oak Level Road N 1°13'8" E 62.37 feet to a point; thence along the right of way of Oak Level Road N 76°19'10" W 513.20 feet to a point in the western property line of Windsor Hall Subdivision; thence along the line of Windsor Hall Subdivision N 1°33'15" E a distance of 1076.53 feet to a point; thence N 0°45'13" E 48.90 feet; thence N 1°17'22" E 259.43 feet to a point in the line for Ricks Plantation Subdivision; thence cornering N 89°28'5" W 1096.73 feet; thence cornering S 0°33'41" W 255.07 feet; thence cornering N 89°49'41" W 335.46 feet to a point in the eastern right of way of Old Carriage Road; thence across Old carriage Road N 23°16'25" W 113.27 feet to the

southeastern corner for Julian C & Wife Bartholomew (deed book 863,page 319); thence along the Bartholomew line N 0°28'6" E 883.10 feet to the corner for H & S Land LLC; thence along the property line for H & S Land LLC N 0°25'39" E 272.52 feet; thence continuing the following courses and distances N 87°12'45" W 128.96 feet; thence S 27°27'45" W 146.05 feet; thence N 89°28'11" W 23.54 feet; thence S 15°32'37" W 305.66 feet; thence S 62°8'18" W 208.45 feet; thence N 83°40'54" W 200.41 feet; thence S 83°33'36" W 572.71 feet; thence N 84°19'45" W 426.91 feet; thence S 41°12'57" W 182.91 feet; thence N 82°41'11" W 173.08 feet; thence S 5°17'6" W 32.95 feet; thence S 9°30'57" E 57.63 feet; thence S 13°23'32" E 7.08 feet; thence S 28°34'6" E 54.73 feet; thence S 41°20'51" E 30.87 feet; thence S 48°27'52" E 41.07 feet; thence N 53°22'27" E 34.28 feet; thence N 87°41'46" E 157.60 feet; thence N 73°1'28" E 89.90 feet; thence S 47°31'34" E 174.24 feet; thence S 61°34'43" E 87.47 feet; thence S 30°46'39" W 140.93 feet; thence S 60°46'50" E 123.48 feet; thence N 30°22'56" E 223.86 feet; thence S 60°52'48" E 154.36 feet; thence S 77°42'42" E 93.55 feet; thence S 89°31'6" E 140.52 feet; thence S 89°31'6" E 173.32 feet; thence N 80°49'57" E 7.20 feet to a point in the eastern property line for Julian C & Wife Bartholomew (deed book 863,page 319); thence along the Bartholomew line the following courses and distances S 0°3'20" E 397.73 feet; thence N 82°1'47" W 42.62 feet; thence S 1°3'1" W 168.61 feet; thence N 89°29'1" E 36.36 feet; thence S 84°56'23" E 310.43 feet to a point in the property line for Culpepper William H Jr (deed book 1289, page 694); thence along the Culpepper line S 12°55'45" W 271.51 feet to a point in the northern right of way line of Oak Level Road; thence along the northern right of way line of Oak Level Road N 67°41'33" W 314.80 feet to a point; thence across Oak Level Road S 4°1'33" W 65.75 feet to the north eastern corner for Oak Level Ruritan Club (deed book 1150, page 97); thence along the line for Oak Level Ruritan Club S 7°48'52" W 318.30 feet to a point; thence cornering N 81°6'48" W 331.75 feet a corner for H & S land LLC; thence along the H & S land LLC the following courses and distances N 78°39'26" W 85.37 feet; thence S 11°13'42" W 719.32 feet; thence N 80°45'20" W 214.30 feet; thence N 23°54'10" W 5.62 feet to a point in the eastern right of way line for Barnes Hill Church Road; thence across Barnes Hill Church Road N 75°27'0" W 56.53 feet to a point in Daniel Farm Subdivision (Plat book 32 page 319); thence along the Daniel Farm Subdivision line N 78°24'58" W 291.76 feet; thence cornering N 11°14'40" E 645.27 feet; thence cornering S 81°36'47" E 108.35 feet to the south west corner for Robert W & Jill G Dawes(plat book 29, page 72); thence along the Dawes line N 8°38'28" E 175.00 feet to a point; thence cornering S 84°11'2" E 186.94 feet to a point in the western right of way line for Barnes Hill Church Road; thence along the western right of way line for Barnes Hill Church Road N 11°18'35" E 118.73 feet to the south east corner for Michael A Daniel (deed book 1816, page 867); thence N 78°21'24" W 336.41 feet to a point; thence cornering N 10°0'36" E 47.07 feet to the south seat corner for Ricky Allen & Ella Rae Barnes (deed book 1963, page 685); thence N 61°10'35" W 231.88 feet to the south east corner for Michael A Daniel (deed book 1816,page 867); thence along the Daniel line the following courses and distances N 29°5'33" E 302.02 feet; thence N 61°16'56" W 48.14 feet; thence S 29°2'35" W 301.91 feet; thence N 61°13'33" W 295.24 feet; thence N 0°28'15" W 345.13 feet; thence N 0°26'18" W 68.92 feet to a point in the southern right of way of Oak level Road; thence along the southern right of way of Oak level Road the following courses and distances N 61°18'0" W 141.27 feet; thence N 61°21'8" W 30.77 feet; thence N 60°55'25" W 734.90 feet; thence N 57°27'38" W 145.01 feet; thence N 54°11'5" W 43.47 feet; thence

N 52°17'23" W 64.78 feet; thence N 52°36'18" W 1064.28 feet; thence N 53°51'39" W 51.76 feet; thence N 53°6'5" W 139.28 feet to the north east corner for James Albert Vick; thence S 27°24'37" W 63.17 feet; thence S 21°29'44" W 968.81 feet to south east corner for Benbrook Subdivision; thence along the Benbrook Subdivision line the following courses and distances S 87°18'0" W 2563.08 feet; thence N 4°29'29" W 635.18 feet; thence S 62°1'13" W 56.62 feet; thence N 27°35'15" W 15.66 feet; thence S 62°18'10" W 240.57 feet; thence N 27°33'26" W 253.44 feet to a point in the southern right of way line of east Old Spring Hope Road; thence along the southern right of way line of east Old Spring Hope Road the following courses and distances N 62°38'1" E 539.93 feet; thence N 62°40'40" E 554.35 feet; thence N 60°22'47" E 565.51 feet; thence N 56°2'2" E 61.19 feet; thence N 56°35'55" E 480.94 feet; thence N 55°18'31" E 360.46 feet to the south east corner of Oak Level Road; thence along the right of way of Oak level Road S 46°36'31" E 379.48 feet; thence S 47°4'35" E 313.61 feet to a point; thence across Oak level Road N 69°10'53" E 68.60 feet to the south west corner for William t Thompson; thence N 66°39'3" E 172.37 feet; thence cornering and passing thru the Dwight A Harper Sr. line S 52°23'33" E 423.19 feet; thence cornering N 34°0'55" E 329.81 feet; thence cornering S 53°14'40" E 301.43 feet to the north west corner for Ollie A Bass Jr 9deed book 1074,page 239); thence along the Bass line the following courses and distances S 53°9'12" E 1736.13 feet; thence N 0°25'13" E 1028.83 feet; thence S 86°55'25" E 718.43 feet to the south west corner for Biltmore Estates Dev LLC (deed book 2160.page 96); thence along the Biltmore Estates line the following courses and distances N 19°18'23" E 240.07 feet; thence N 38°24'53" E 352.76 feet; thence N 3°23'25" E 55.82 feet; thence N 3°6'50" E 114.89 feet; thence N 32°33'5" W 356.30 feet; thence N 32°2'9" E 397.00 feet to a point in the Springhaven subdivision (map book 28, page 275); thence along the Springhaven line the following courses and distances S 84°2'25" W 748.80 feet; thence S 83°47'43" W 65.62 feet; thence N 46°39'37" W 72.61 feet; thence S 42°59'48" W 525.35 feet; thence N 16°23'31" W 103.58 feet; thence N 62°19'13" W 40.63 feet; thence N 51°15'34" W 298.23 feet; thence N 7°7'48" W 85.97 feet; thence N 7°7'48" W 42.92 feet; thence N 20°21'32" W 78.15 feet; thence N 20°21'13" W 32.44 feet; thence N 28°34'8" W 29.25 feet; thence N 28°34'8" W 51.42 feet; thence N 28°34'10" W 9.92 feet; thence N 28°34'6" W 13.67 feet; thence N 18°10'38" W 87.05 feet; thence N 18°10'38" W 27.79 feet; thence N 39°32'8" W 6.15 feet; thence N 39°32'13" W 93.48 feet; thence N 84°28'23" W 23.76 feet; thence N 84°28'24" W 225.54 feet; thence N 51°22'35" E 17.36 feet; thence N 54°12'15" W 6.87 feet; thence N 50°51'2" W 12.57 feet; thence N 37°56'56" W 12.60 feet; thence N 30°2'33" W 5.99 feet; thence N 21°6'16" W 7.64 feet; thence N 11°26'0" W 11.35 feet; thence N 6°6'57" W 7.04 feet; thence N 24°29'54" W 5.43 feet; thence N 12°52'26" W 4.49 feet; thence N 39°28'23" W 8.26 feet; thence N 45°37'45" W 8.04 feet; thence N 60°7'2" W 15.86 feet; thence N 59°47'18" W 28.64 feet; thence N 55°0'28" W 10.68 feet; thence N 44°34'55" W 6.05 feet; thence N 31°51'20" W 7.58 feet; thence N 14°37'11" W 5.94 feet; thence N 12°59'37" W 6.67 feet; thence N 27°3'4" W 6.60 feet; thence N 50°54'24" W 5.15 feet; thence N 56°30'14" W 5.10 feet; thence N 79°22'49" W 5.09 feet; thence N 77°22'3" W 7.43 feet; thence S 74°53'31" W 6.47 feet; thence S 70°36'53" W 7.16 feet; thence N 88°34'56" W 8.55 feet; thence N 84°44'17" W 2.46 feet; thence N 73°52'33" W 8.33 feet; thence N 51°24'12" W 26.55 feet; thence N 41°46'11" W 69.81 feet; thence N 37°34'5" W 20.50 feet; thence N 35°13'3" W 7.80 feet; thence N 50°1'41" W 5.55 feet; thence N 56°27'17" W 6.90 feet; thence N 48°48'49" W 5.32 feet; thence N 56°43'29" W 4.78 feet; thence N

60°59'0" W 9.15 feet; thence N 45°40'44" W 11.19 feet; thence N 37°24'28" W 5.35 feet; thence N 20°37'43" W 5.68 feet; thence N 10°27'38" W 8.26 feet; thence N 1°32'50" W 9.25 feet; thence N 0°0'0" W 7.94 feet; thence N 17°52'44" E 4.07 feet; thence N 15°21'23" E 21.72 feet; thence N 6°31'5" E 6.61 feet; thence N 13°32'53" E 13.68 feet to a point in the southern right of way line for Old Spring Hope Road; thence along the southern right of way line for Old Spring Hope Road and the Springhaven line the following courses and distances N 68°9'28" E 97.77 feet; thence N 65°27'1" E 168.48 feet; thence N 61°59'21" E 50.97 feet; thence N 60°18'49" E 75.97 feet; thence N 55°39'38" E 56.62 feet; thence N 49°32'59" E 98.80 feet; thence N 47°20'51" E 16.95 feet; thence N 48°39'57" E 54.60 feet; thence N 46°11'0" E 22.10 feet; thence N 46°11'0" E 87.04 feet; thence N 48°27'10" E 25.14 feet; thence N 48°27'12" E 113.23 feet; thence N 48°27'11" E 22.30 feet; thence N 51°43'57" E 82.13 feet; thence N 51°43'58" E 97.72 feet; thence N 51°43'58" E 80.80 feet; thence N 53°35'16" E 15.59 feet; thence N 53°35'16" E 28.21 feet; thence N 58°31'41" E 88.23 feet; thence N 60°30'12" E 73.24 feet; thence N 61°22'51" E 65.50 feet; thence N 64°18'41" E 17.97 feet to a point; thence cornering and leaving Old Spring Hope Road and continuing with the Springhaven line the following courses and distances S 45°51'56" E 316.84 feet; thence S 45°51'0" E 533.20 feet; thence S 45°51'51" E 350.41 feet; thence S 53°19'6" E 262.08 feet; thence S 53°19'5" E 109.07 feet; thence S 45°13'13" E 318.63 feet to a point in northern right of way of Springmill Trail Road; thence along in northern right of way of Springmill Trail Road N 84°41'22" E 248.25 feet to a point in the Old Carriage Farm Subdivision; thence along the Old Carriage Farm Subdivision line the following courses and distances N 2°51'14" E 1316.68 feet to a point in the southern right of way of Nash County Rail Road; thence continuing with the Old Carriage Farm Subdivision line and Nash County Rail Road the following courses and distances S 88°8'12" E 486.84 feet; thence N 1°58'57" E 41.01 feet; thence S 87°45'57" E 199.99 feet; thence S 1°48'19" W 39.94 feet; thence S 88°3'28" E 1353.58 feet; thence S 88°5'25" E 84.41 feet; thence S 87°51'32" E 406.53 feet; thence S 86°6'7" E 148.74 feet; thence across Nash County Rail Road N 12°41'58" E 133.65 feet to a point in Ralph D Batchelor (deed book 1562 page 951); thence along the N 14°15'10" E 116.67 feet; thence N 14°1'30" E 1063.54 feet; thence S 77°59'40" E 638.22 feet; thence along the Batchelor line the following courses and distances N 2°18'19" W 1584.78 feet; thence S 87°37'6" W 401.60 feet to a point in the southern right of way of Eastern Avenue; thence along the southern right of way of Eastern Avenue S 3°42'52" W 536.38 feet to a point in the in Ralph D Batchelor property ; thence cornering and leaving Eastern avenue and along the Batchelor line S 80°25'2" W 1791.11 feet to a point in the Dixie Place Land LLC; thence cornering N 1°47'53" W 573.66 feet to the southern right of way of Eastern Avenue; thence across Eastern Avenue N 3°25'11" E 62.86 feet to the south east corner for Carolyn R Eggers; thence along the Eggers line N 1°20'39" W 2642.88 feet to a point in the southern right of way line of U.S.64 highway; thence across U.S. 64 Highway N 1°47'18" W 265.01 feet to a point in the West Hampton Estates LLC subdivision; thence along the property line for West Hampton Estates LLC the following courses and distances S 69°25'54" W 513.98 feet; thence S 71°16'26" W 496.93 feet; thence S 75°37'48" W 359.68 feet; thence N 14°31'43" W 267.85 feet; thence N 39°4'6" E 101.01 feet; thence S 75°28'17" W 120.00 feet; thence N 14°31'5" W 285.88 feet; thence N 73°41'19" E 328.82 feet; thence N 48°4'25" E 53.29 feet; thence N 48°4'26" E 152.50 feet; thence N 41°1'26" W 37.01 feet; thence N 1°57'30" W 433.11 feet; thence N 63°22'33" W 296.33 feet; thence N 80°27'1" W 55.59 feet; thence N 62°48'5" W 402.62

feet; thence N 43°39'42" E 358.27 feet; thence N 57°50'0" E 214.11 feet; thence N 76°40'0" E 213.40 feet; thence S 84°14'39" E 212.61 feet; thence S 65°10'39" E 216.25 feet; thence S 17°1'7" E 224.45 feet; thence S 33°2'39" E 180.94 feet; thence N 61°42'59" E 123.28 feet; thence N 25°58'29" E 193.82 feet; thence S 55°53'44" E 207.37 feet; thence N 36°50'22" E 69.06 feet; thence N 44°1'12" E 72.50 feet; thence N 51°4'38" E 61.64 feet; thence S 24°18'51" E 13.11 feet; thence N 56°35'57" E 31.48 feet; thence N 60°25'19" E 49.70 feet; thence N 64°8'11" E 30.56 feet; thence N 25°21'17" W 360.31 feet; thence N 67°51'56" E 183.99 feet to a point in the Carriage Trail Subdivision said point being the north west corner of lot 62 block A Section One West Hampton Estates; and Carriage Trail Section Four; thence along the property line for and Carriage Trail the following courses and distances 87°54'52" E 79.89 feet; thence S 0°46'33" E 61.33 feet; thence S 84°34'7" E 397.86 feet; thence N 0°28'51" W 82.71 feet; thence S 76°4'41" E 455.38 feet; thence S 67°33'40" E 73.03 feet; thence S 6°49'28" E 572.24 feet; thence S 46°46'36" W 119.74 feet; thence S 1°0'22" E 213.53 feet; thence S 13°9'44" E 188.84 feet; thence S 18°13'16" E 100.74 feet; thence S 14°20'41" E 82.57 feet to a point in the northern right of way of U.S.64 Highway; thence across U.S.64 Highway S 17°2'0" E 270.89 feet to a point in the southern right of way of U.S.64 Highway; thence along the southern right of way of U.S.64 Highway the following courses and distances N 70°2'41" E 848.49 feet; thence S 27°36'46" E 18.34 feet; thence N 73°18'2" E 23.49 feet; thence N 78°3'11" E 104.84 feet; thence N 85°11'17" E 123.72 feet; thence N 87°42'12" E 219.93 feet; thence N 1°54'47" W 29.95 feet; thence N 88°22'39" E 331.21 feet; thence N 74°22'13" E 142.50 feet to a point in the western right of way of Old Carriage Road; thence along the western right of way of Old Carriage Road the following courses and distances S 71°29'58" E 86.47 feet; thence S 19°26'13" E 136.90 feet; thence S 11°37'20" E 155.27 feet; thence S 4°38'52" E 200.58 feet; thence S 3°33'12" E 165.39 feet; thence N 89°36'27" E 18.25 feet; thence S 1°2'38" E 219.54 feet; thence S 1°38'14" E 393.72 feet to a point in the Coley John T Heirs (deed book 350,page 599);thence along the Coley John T Heirs property line the following courses and distances S 1°34'52" E 507.38 feet; thence S 81°25'31" W 1354.39 feet; thence S 46°10'43" E 10.74 feet; thence S 36°38'29" E 91.15 feet; thence S 50°36'33" E 40.37 feet; thence S 69°26'38" E 5.87 feet; thence S 84°33'2" E 19.16 feet; thence S 78°41'24" E 5.10 feet; thence S 65°37'24" E 4.39 feet; thence S 72°55'57" E 44.84 feet; thence S 78°53'13" E 7.13 feet; thence N 84°35'25" E 16.63 feet; thence N 75°30'54" E 7.75 feet; thence N 72°44'3" E 9.69 feet; thence N 73°23'8" E 16.19 feet; thence N 73°18'2" E 5.22 feet; thence S 85°26'17" E 11.79 feet; thence S 80°57'37" E 5.57 feet; thence S 73°57'36" E 5.20 feet; thence S 66°25'21" E 47.25 feet; thence S 80°22'18" E 7.10 feet; thence S 67°50'47" E 18.91 feet; thence S 80°8'3" E 5.84 feet; thence S 57°34'44" E 33.01 feet; thence S 52°51'30" E 84.60 feet; thence S 35°14'7" E 38.78 feet; thence S 22°37'11" E 22.75 feet; thence S 16°5'4" E 42.42 feet; thence S 7°52'48" E 36.47 feet; thence S 2°50'9" E 20.21 feet; thence S 2°29'40" W 63.80 feet; thence S 0°33'40" E 433.96 feet; thence S 8°29'54" E 351.86 feet; thence N 87°6'8" E 612.51 feet; thence S 0°10'53" E 4.97 feet; thence N 87°34'1" E 9.01 feet; thence N 1°21'5" W 741.96 feet; thence N 81°55'32" E 226.50 feet to a point in western right of way of Old Carriage Road; thence along western right of way of Old Carriage Road the following courses and distances S 2°18'30" E 240.06 feet; thence S 84°8'25" E 5.15 feet; thence S 1°24'45" W 20.50 feet; thence S 1°31'47" E 502.64 feet; thence S 0°6'35" E 56.72 feet; thence S 89°4'21" E 54.41 feet; to the point and place of BEGINNING, containing 1383 acres, more or less;

3.0 SEWER OUTFALLS

3.1 *Findings of Existing Sewer Service:* Annexation Area 1 is a large area with some subdivisions and undeveloped parcels having the potential to be served by existing or planned sewer outfalls.

a. The 18" outfall which traverses along Stony Creek and serves the Town of Nashville is capable of serving the Carriage Trail Subdivision north of US64.

b. Phase 3 of the Maple Creek Outfall, currently identified to be designed and constructed in FY10, will extend 15" outfall(s) along Maple Creek and a tributary from I-95 to the west of Old Carriage Road.

c. An 8" gravity sewer along Old Carriage Road and Nash Community College pump station has available capacity to serve surrounding area along Old Carriage Road.

3.2 *Sewer Service Availability:*

a. The scheduled 15" outfalls along the main (northern and southern) Maple Creek tributaries is in a position to serve the following areas with gravity sewer:

- Carriage Farm Subdivision
- Barns Hill Church Road (within annexation area)
- Oak Level Road from Old Carriage Road to Annie Lee Road
- Ricks Plantation/Windsor Hall
- Oak Level Crossing
- Country Lane Acres
- Benbrook
- Residential lots along S. Old Carriage Road

b. The existing 18" outfall along Stony Creek can serve the Carriage Trail subdivision.

c. The 8" gravity main along Old Carriage Road and/or Nash Community College pump station can serve the Shellcastle Subdivision and remaining annexation area along Old Carriage Road across from Carriage Farm subdivision.

3.3 *Community Action for Sewer Service:* Property owners within Annexation Area 1 who desire sewer service will need to petition City Council for extension of sewer collection lines.

a. *Cost to City for Sewer Service to Annexation Area 1:*

The following costs reflect the anticipated necessary improvements associated with different areas/developments within the annexation area. Though the above mentioned outfalls and sewer station provide the main and trunk-line availability for these areas to be served via petitions, there

are significant costs associated with serving subdivisions within the area. It will be at the discretion of City Council to determine whether to wait for petition requests to install these improvements or program them to be installed independent of any petition requests.

The estimate of the probable construction cost for the various base and alternates is made on the basis of our experience and specific inquiries made to contractors and equipment suppliers in the region for this class of construction and equipment. The estimate of cost represents our best judgment as an experienced and qualified professional generally familiar with the construction industry. However, since we have no control over the cost of labor, materials, equipment or services furnished by others, or over a contractor's methods of determining prices, or over competitive bidding or market conditions, we must revise and or adjust the cost from time to time when actual construction is contemplated by the City Council.

Options have been identified as different means to provide service(s) to an area and are followed by a recommendation.

Base Costs indicate the minimal amount of work needed to be done in order to serve or assist in serving surrounding areas.

Alternates have been identified as work that is in addition to the base costs that is necessary to serve every annexed lot within an area.

Example: A sewer pump station (option 1 base cost) or outfall (option 2 base cost) must be built before any subdivisions (alternates) can be built. Not every alternate has to be built but the base, regardless of the number of alternates, must be constructed prior to committing to the construction of an alternate.

- i. Analysis and Cost Estimate: OPTION 1 Base Cost- Oak Level Road Lift Station; Construct sewer pump station, gravity lines and forcemain approximately 850' west of the I-95 overpass on Oak Level Road. This station would be in a position to serve Rick's Plantation/Windsor Hall, Country Lane Acres and areas east of Old Carriage Road along Oak Level Road. OPTION 2 Base Cost- Tributary Outfall to Oak Level Road and extending to Country Lane Acres; construct 10" gravity outfall from proposed southern Maple Creek Outfall on west side of I-95 and extend up creek to Country Lane. This would provide gravity sewer to all above mentioned areas. Alternate 1 reflects the anticipated costs to provide gravity sewer to a majority of lots within Rick's Plantation/Windsor Hall (note: the northern portion of this subdivision may be served via the southern branch of the Maple

Creek Outfall; however the information below assumed costs of serving 8" gravity sewer throughout the entire subdivision back to the proposed lift station); Alternate 2 reflects the cost to serve Country Lane Acres with an 8' collector and running a minor outfall along the tributary to Oak Level Road.

BASE COST, OPTION 1- Oak Level Pump Station

1)	4" x 4" CRM Standard Pump Station 1 @ \$225,000 ea.	\$225,000
2)	8" Gravity Sewer (10-12'), 2000 ft. @ \$45/ft.	90,000
3)	Manholes, 7 @ \$2500/ea	17,500
4)	4" FM, 5000 ft @ \$20/ft	100,000
	Sub-total	\$432,500
	Contingency	45,000
	Engineering and inspection	45,000
	Legal, Easements and Misc.	45,000
	Base Cost Option 1	\$567,500

BASE COST, OPTION 2- Tributary Outfall through Oak Level Road to Country Lane Acres

1)	10" Gravity Sewer (10-12'), 2300 ft @ \$50/ft	\$115,000
2)	10" Gravity Sewer (14-18'), 1000 ft @ \$70/ft	70,000
3)	10" Gravity Sewer (>20'), 1000 ft @ \$100/ft	100,000
4)	24" Steel Encasement w 10" DIP, Bore and Jack under Oak Level 120' @ \$350/ft	42,000
5)	Clearing and Grubbing, 3.5 acres @ \$15,000/acre	52,500
6)	Manholes, 9 (10-12') @ \$2500 ea	22,500
7)	Manholes 3 (14-18') @ \$4500 ea	13,500
8)	Manholes 3 (>20') @ \$5500 ea	15,500
	Subtotal	\$431,100
	Contingency	45,000
	Engineering and Inspection	45,000
	Legal, Easements and Misc.	120,000
	Base Cost Option 2	\$641,000

ALTERNATE 1 – Ricks Plantation/Windsor Hall

1)	8" Gravity Sewer (10-12'), 3000 ft @ \$45/ft	\$135,000
2)	8" Gravity Sewer (6-8'), 4500 ft @ \$40/ft	180,000
3)	Manholes, 10 (10-12') @ \$2500 ea	25,000
4)	Manholes, 14 (6-8') @ \$2250 ea	31,500
5)	Service Taps and Lines, 99 lots @ \$1,000/lot	99,000
6)	Pavement/Drive Repair, LS @ \$50,000	50,000
	Subtotal	\$520,500
	Contingency	52,000
	Engineering and Inspection	52,000

Legal,Easements and Misc.	20,000
Alternate 1 Cost	\$644,500

ALTERNATE 2 – Country Lane Acres * (Note 8” minor outfall would not have to be installed if Option 2 Base is constructed)

1)	8” Gravity Sewer (10-12’), 3300 ft @ \$45/ft	\$148,000
2)	8” Minor Outfall along tributary (10-12’)1100 ft @ \$45/ft	49,500
3)	Manholes, 14 @ \$2500 ea	35,000
4)	Service Taps and Lines, 31 lots @ \$1,000/lot	31,000
5)	16” Steel Encasement, Bore and Jack under Oak Level Road, 120’ @ \$200/ft	24,000
6)	Pavement/Drive Repair, LS @ \$16,000	16,000
7)	Clearing and Grubbing 1 acre @ \$15,000/acre	15,000
	Subtotal	\$318,500
	Contingency	32,000
	Engineering and Inspection	32,000
	Legal,Easements and Misc.	50,000
*Easement to \$15,000 and \$0 clearing and grubbing if Option 2 Base installed		
	Alternate 2 Cost	\$432,500

Total Cost for Option 1 Base and Alternates	\$1,702,500
Total Cost for Option 2 Base and Alternates	\$1,776,000

ii. Analysis and Cost Estimate: Base Cost- Benbrook Lift Station; Construct sewer pump station, gravity lines and forcemain along Mosswood Dr within the Benbrook Subdivision. This station would be in a position to serve the Benbrook Subdivision and portions of Old Spring Hope Road and Oak Level Road within the defined annexation area. The base cost reflects building the pump station and running collector lines through a portion of Benbrook Subdivision to be in a position to serve Oak Level Road and Old Spring Hope Road and constructing the forcemain and 8” gravity along Oak Level Road; Alternate 1 reflects the cost to run sewer entirely within the Benbrook Subdivision and a position to serve Oak Level Road and Old Spring Hope Road. Alternate 2 reflects the cost to run sewer along Old Spring Hope Road and Oak Level Road back to the Benbrook Subdivision.*Note: Portions of, if not all of the Oak Level Crossing Collector (see Section vi) would need to be constructed to receive the flow.

BASE COST- Benbrook Pump Station

1)	4” x 4” CRM Standard Pump Station, 1@\$225,000 ea.	\$225,000
2)	8” Gravity Sewer (10-12’), 3500 ft@\$45/ft (within subdivision)	157,500

3)	8" gravity sewer from high point on Oak Level Rd east to Oak Level Crossing Subdivision(6-8'), 1800ft @\$40/ft	72,000
4)	Manholes(10-12'), 12 @ \$2500	30,000
5)	Manholes(6-8'), 6 @ \$2250	13,500
6)	4" FM, 4400 ft @ \$20/ft	88,000
7)	Service Taps and Lines, 40 lots @ \$1000/lot	40,000
8)	Pavement/Drive Repair, LS @ \$20,000	20,000
	Subtotal	\$626,000
	Contingency	63,000
	Engineering and Inspection	63,000
	Legal, Easements and Misc.	63,000
	Base Cost	\$815,000

ALTERNATE 1 – Remaining gravity sewer within Benbrook

1)	8" Gravity Sewer (10-12'), 3500 ft @ \$45/ft	157,500
2)	Manholes, 12 @ \$2500 ea	30,000
3)	Service Taps and Lines, 35 lots @ \$1,000/lot	35,000
4)	Pavement/Drive Repair, LS @ 16,000	16,000
	Subtotal	\$238,500
	Contingency	24,000
	Engineering and Inspection	24,000
	Legal,Easements and Misc.	24,000
	Alternate 1 Cost	\$247,000

ALTERNATE 2 – Oak Level Road/Old Spring Hope Road

1)	8" Gravity Sewer (6-8'), 1800 ft @ \$40/ft	72,000
2)	8" Gravity Sewer (10-12'), 1300 @\$45/ft	58,500
3)	Manholes, (6-8') 6 @ \$2250 ea	13,500
4)	Manholes (10-12') 4 @ \$2500 ea	10,000
3)	Service Taps and Lines, 35 lots @ \$1,000/lot	35,000
	Subtotal	\$189,000
	Contingency	20,000
	Engineering and Inspection	20,000
	Legal,Easements and Misc.	10,000
	Alternate 2 Cost	\$239,000

Total Cost for Base and Alternate 1	\$1,062,000
Total Cost for Base and Alternate 2	\$1,054,000
Total Cost for Base and Alternates 1 and 2	\$1,301,000

iii. Analysis and Cost Estimate: Base Cost - Shellcastle Collector. Construct gravity sewer lines within the subdivision. The sewer lines will only be deep enough to lots within Shellcastle subdivision. Option 1 would construct a sewer lift station to the

east of the subdivision in the vicinity of unopened right-of-way. This station would be designed to accept flow from the remainder of the annexation area as well as additional areas along Eastern Ave and Oak Level Road. This station would pump to the Nash Community College Lift station approximately 1750 feet to the east. Option 2 would construct a 10" gravity outfall along a tributary of Stony Creek from the Old Carriage Road to Eastern Ave. This outfall would be deep enough to serve Shellcastle Subdivision as well as areas to the east along Eastern Ave and potentially the northern portion of Old Spring Hope Road. This outfall would also allow for the Nash Community College pump station to be taken off line and flow redirected to the Stony Creek Outfall. In addition, this outfall would be in a position to serve Carriage Trail Subdivision.

BASE COST- Shellcastle Collector

1)	8" Gravity Sewer (6'-8'), 3000 ft. @ \$40/ft	\$120,000
2)	Manholes, 12 @ \$2250/ea	27,000
3)	Service Taps and Lines, 34 lots @ \$1000/lot	34,000
4)	Pavement/Drive Repair, LS @ \$15,000	15,000
	Sub-total	\$196,000
	Contingency	20,000
	Engineering and inspection	20,000
	Legal, Easements and Misc.	20,000
	Base Cost	\$256,000

OPTION 1 – Shellcastle Pump Station

1)	4" x 4" CRM Standard Pump Station, 1 @ \$225,000 ea.	\$225,000
2)	4" FM, 2500 ft @ \$20/ft	50,000
3)	Clearing and Grubbing 1 acre @ \$15,000/acre	15,000
	Subtotal	\$290,000
	Contingency	29,000
	Engineering and Inspection	29,000
	Legal, Easements and Misc.	29,000
	Option 1 Cost	\$377,000

Total Cost for Base and Option 1	\$633,000
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OPTION 2 – Stony Creek Tributary Outfall

1)	10" Gravity Sewer (12-14), 6700 ft @ \$55/ft	\$385,000
2)	Manholes, 20 @ \$3000	60,000
3)	24" Steel Encasement w 10" DIP, Bore and Jack under US 64 300' @ \$500/ft	150,000

4)	Clearing and Grubbing 3.5 acre @ \$15,000/acre	45,000
	Subtotal	\$640,000
	Contingency	65,000
	Engineering and Inspection	65,000
	Legal,Easements and Misc.	100,000
	Option 2 Cost	\$870,000

Total Cost for Base and Option 2	\$1,126,000
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iv. Analysis and Cost Estimate: Carriage Trail Collector and Outfall: Construct gravity sewer lines to all improved lots within Carriage Trail subdivision.

In addition, it reflects the cost to extend a 10" gravity sewer along Old Carriage Road from the Stony Creek Outfall to Carriage Trail. This outfall would be deep enough to be extended south under US64 to Eastern Avenue as described previously in Section iii.

BASE COST- Carriage Trail Collector

1)	8" Gravity Sewer (10'-12'), 3700 ft. @ \$45/ft	\$166,500
2)	Manholes, 12@ \$2500/ea	30,000
3)	Service Taps and Lines, 22 lots @ \$1000/lot	22,000
4)	Pavement/Drive Repair, LS @ \$20,000	20,000
	Sub-total	\$238,500
	Contingency	24,000
	Engineering and inspection	24,000
	Legal, Easements and Misc.	10,000
	Base Cost	\$296,500

Stoney Creek Tributary Outfall (for collector)

1)	10" Gravity Sewer (12-14), 1550 ft @ \$55/ft	\$85,250
2)	Manholes, 6 @ \$3000	60,000
	Subtotal	\$145,250
	Contingency	15,000
	Engineering and Inspection	15,000
	Legal,Easements and Misc.	5,000
	Alternate 2 Cost	\$180,250

Total Cost for Base(Collector and Outfall)	\$439,250
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v. Analysis and Cost Estimate: Carriage Farm Collector: Construct 8"gravity sewer lines to all improved lots within Carriage Farm subdivision. Collector lines will be going to either the southern outfall or the northern outfall line.

BASE COSTS- Carriage Farm Collection System

1)	8" Gravity Sewer (8'-10'), 24000 ft. @ \$42/ft	\$1,008,000
2)	Manholes, 85@ \$2250/ea	191,250
3)	Service Taps and Lines, 294 lots @ \$1000/lot	294,000
4)	Pavement Repair, LS @ \$120,000	120,000
	Sub-total	\$1,613,250.00
	Contingency	160,000
	Engineering and inspection	160,000
	Legal, Easements and Misc.	250,000
	Base Cost	\$2,183,250

vi. Analysis and Cost Estimate: Oak Level Crossing Subdivision collector: Construct 8"gravity sewer lines to all lots within subdivision to southern outfall line. *Also includes costs of serving residents along northern and southern side of Oak Level Rd adjacent to and across from the subdivision

BASE COSTS- Oak Level Crossing

1)	8" Gravity Sewer (8'-10'), 5700 ft. @ \$42/ft	\$239,400
2)	Manholes, 15@ \$2250/ea	33,750
3)	Service Taps and Lines, 68 lots @ \$1000/lot	68,000
4)	Pavement/Drive Repair, LS @ \$30,000	30,000
	Sub-total	\$371,150
	Contingency	37,000
	Engineering and inspection	37,000
	Legal, Easements and Misc.	15,000
	Base Cost	\$460,150

vii. Analysis and Cost Estimate: Barnshill Church Road collector: Construct 8"gravity sewer lots along Barnshill Church Road within the annexation area.*Note: Portions of, if not all of the Oak Level Crossing Collector (see Section vi) would need to be constructed to receive the flow.

BASE COSTS-Barnshill Church Road

1)	8" Gravity Sewer (8'-10'), 1050 ft. @ \$42/ft	\$44,100
2)	Manholes, 4@ \$2250/ea	6,750
3)	Service Taps and Lines, 14 lots @ \$1000/lot	14,000
4)	Pavement Repair, LS @ \$10,000	10,000
5)	16" Steel Encasement, Bore and Jack under Oak Level Road, 75' @ \$200/ft	15,000
	Sub-total	\$89,850
	Contingency	9,000

Engineering and inspection	9,000
Legal, Easements and Misc.	5,000
Base Cost	\$112,850

viii. Analysis and Cost Estimate: S. Old Carriage Road collectors:
Alternate 1 would serve the areas north of the railroad tracks from the high point on Old Carriage to Chippenham Road. Alternate 2 would serve the area to the north and south of the railroad tracks from Chippenham Road to Nash Central High Road. Alternate 3 would serve the area south of Nash Central Road High Church Road to the last residential lot before Oak Level Road.

ALTERNATE 1 – High point along S. Old Carriage Rd to Chippenham Rd

1)	8" Gravity Sewer (6-8'), 900 ft @ \$40/ft	\$36,000
2)	Manholes, 3 @ \$2250 ea	6,750
4)	Service Taps and Lines, 4 lots @ \$1,000/lot	4,000
5)	16" Steel Encasement, Bore and Jack under Old Carriage Road, 75' @ \$200/ft	15,000
6)	Pavement/Drive Repair, LS @ \$20,000	20,000
	Subtotal	\$81,750
	Contingency	8,000
	Engineering and Inspection	8,000
	Legal, Easements and Misc.	5,000
	Alternate 1 Cost	\$102,750

ALTERNATE 2 – Chippenham Road to Nash Central High Road

1)	8" Gravity Sewer (6-8'), 2300 ft @ \$40/ft	\$92,000
2)	Manholes, 8 @ \$2250 ea	18,000
3)	Service Taps and Lines, 9 lots @ \$1,000/lot	9,000
4)	16" Steel Encasement, Bore and Jack under Nash County Railroad, 100' @ \$250/ft	25,000
5)	Pavement/Drive Repair, LS @ \$15,000	15,000
	Subtotal	\$159,000
	Contingency	16,000
	Engineering and Inspection	16,000
	Legal, Easements and Misc.	10,000
	Alternate 2 Cost	\$201,000

ALTERNATE 3 – Nash Central High Road southward to remaining lots

1)	8" Gravity Sewer (6-8'), 3200 ft @ \$40/ft	\$128,000
2)	Manholes, 12 @ \$2250 ea	27,000

3)	Service Taps and Lines, 9 lots @ \$1,000/lot	15,000
4)	Pavement/Drive Repair, LS @ \$10,000	10,000
	Subtotal	\$180,000
	Contingency	18,000
	Engineering and Inspection	18,000
	Legal,Easements and Misc.	10,000
	Alternate 3 Cost	\$226,000

3.4 *Summary* – Below are the total costs associated with serving the area with outfalls and collectors. They have been broken down by subdivisions and areas to better understand the potential costs associated with providing every annexed lot with sewer service. Any recommendation below is based on construction cost, service area impacts and benefits and ability to meet future development needs if applicable.

- a. Outfalls that must be extended (*Note these costs have been estimated as part of the CIP and construction from Halifax Road to the both outfall termini within this area is scheduled for FY10)

Maple Creek Tributary Outfalls- \$3,417,000

- b. Collectors that may be petitioned to be extended from the outfalls to subdivisions or individual lots

East Oak Level Road Collection (Option 1 or 2 needed to serve subdivisions)

Option 1 Oak Level Road PS	\$567,500	
Option 2 Tributary Outfall to Main Outfall	\$641,000	<u>Recommended</u>
Ricks Plantation/West Hall	\$644,500	
Country Lane Acres	\$333,000	

TOTAL COST FOR THIS AREA \$1,621,500

Oak Level Crossing Collection (Portions of Oak Level Crossing Subdivision need to be installed to serve following subdivisions)

Base - Oak Level Crossing	\$460,150
Barnshill Church Road	\$112,850
Benbrook	\$1,062,000
Oak Level Rd/Old Spring Hope Rd parcels	\$239,000

TOTAL COST FOR THIS AREA \$1,874,000

Carriage Farm Collector

Carriage Farm Subdivision	\$2,183,250
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TOTAL COST FOR THIS AREA	\$2,183,250
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Shellcastle Collection

Shellcastle Collector	\$256,000	
Option 1 Shellcastle PS	\$377,000	<u>Recommended</u>
Option 2 Stoney Creek Tributary Outfall	\$870,000	

TOTAL COST FOR THIS AREA	\$633,000
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Carriage Trail Collection

Carriage Trail Collector	\$296,500
Stoney Creek Tributary Outfall	\$189,250

TOTAL COST FOR THIS AREA	\$489,750
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S. Old Carriage Road Collectors

High Point on S. Old Carriage to Chippenham Rd	\$102,750
Chippenham Rd to Nash Central High Rd	\$201,000
Nash Central High Rd towards Oak Level Rd	\$225,000

TOTAL COST FOR THIS AREA	\$528,750
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TOTAL POTENTIAL COST FOR SEWER SERVICE WITHIN ANNEXATION AREA 1

Required Outfalls: \$3,417,000

Petition/Council Ordered Collectors: \$7,326,250

Total:\$10,743,250

4.0 TRUNK WATER MAINS

4.1 *Findings of Existing Water Service:* Annexation Area 1 is a large area with some subdivisions and undeveloped parcels having the potential to be served by existing or planned water mains.

- a. The proposed Oak Level Road watermain extension, currently identified to be designed and constructed in FYs11-12, will extend a 16" watermain along Oak Level Road from the current terminus at Halifax Road westward to Old Spring Hope Road and northward to Eastern Ave. (Hydraulic modeling will determine the possibility of

tying the 16" into the existing 8" watermain along Old Spring Hope Road between Eastern Ave and the railroad tracks.) This will also extend a 16" along S. Old Carriage Road to the terminus of the 16" watermain near Nash Central High School.

- b. A 16" watermain along Eastern Ave serves that portion of the annexation area.
- c. A 16" watermain along S. Old Carriage Road serves that portion of the annexation area.
- d. A 12" main throughout Carriage Farm Subdivision serves a majority of the existing lots.

4.2 *Service Availability:* All the above mentioned existing and proposed mains have adequate water capacity to supply water to their portion of the annexation area.

Served or Available to Be Served Areas

- a. The scheduled 16" trunk main along Oak Level Road and Old Spring Hope Road is in position to serve the following areas:
 - Barns Hill Church Road (within annexation area)
 - Ricks Plantation/Windsor Hall
 - Oak Level Crossing
 - Country Lane Acres
 - Benbrook
 - Residential lots along Oak Level Road and Old Spring Hope Road
- b. The existing 16" trunk main along S. Old Carriage Rd is in a position to serve the residential lots along S. Old Carriage Road.
- c. The existing 12" main throughout a majority of Carriage Pond Subdivision is in position to serve the remainder of the subdivision towards Old Spring Hope Road.
- d. An 8" main currently serves all of Shellcastle Subdivision.

Unserved Areas

- a. Water trunk main(s) are not available to the Carriage Trail Subdivision north of U.S. 64 and will have to be extended to be in a position to serve the subdivision with water.

4.3 *Community Action for Water Service:* Property owners within Annexation Area 1 who desire water service will need to petition city council for extension of water distribution lines.

- a. *Cost to City for Water Service to Annexation Area 1:*

The following costs reflect the anticipated necessary improvements associated with different areas/developments within the annexation area.

Though a significant portion of the area is in a position to be served by existing or scheduled trunk mains and distribution lines there are significant costs associated with serving existing subdivisions within the area. It will be at the discretion of City Council to determine whether to wait for petition requests to install these improvements or program them to be installed independent of any petition requests.

The estimate of the probable construction cost for the various base and alternates is made on the basis of our experience and specific inquiries made to contractors and equipment suppliers in the region for this class of construction and equipment. The estimate of cost represents our best judgment as an experienced and qualified professional generally familiar with the construction industry. However, since we have no control over the cost of labor, materials, equipment or services furnished by others, or over a contractor's methods of determining prices, or over competitive bidding or market conditions, we must revise and or adjust the cost from time to time when actual construction is contemplated by the City Council.

TRUNK LINE EXTENSIONS REQUIRED, NOT CURRENTLY PLANNED

ix. Analysis and Cost Estimate: OPTION 1 Base Cost – N. Old Carriage Rd Extension: This project would extend the 24" watermain on S. Old Carriage Road from the Nash Central water tank northward under U.S. 64 to Carriage Trail Rd. This main would be in a position to serve Carriage Trail Subdivision as well as have the ability to be extended to connect and loop the 16" main with the existing 12" main along Green Hills Rd currently terminated at Northern Nash High School. OPTION 2 Base Cost – Green Hills Road Extension: This project would extend the 12" watermain along Green Hills Rd westward to N. Old Carriage Rd and then southward to Carriage Trail Rd.

OPTION 1 BASE COST – Old Carriage Rd Main Extension

1)	16" DIP Watermain, 1800 ft@\$50/ft	\$90,000
2)	16" I.D. HDPE Directional Bore under U.S. 64, 875 ft @ \$225/ft.	196,875
3)	Fittings, 2500# @ \$5.00/#	12,500
4)	16" Gate Valves, 3 @ \$2000/ea	6,000
5)	Hydrants, 3 @ \$2800/ea	8,400
6)	6" Gate Valves, 4 @ \$1000/ea	4,000
7)	Pavement/Drive Repair, LS @ \$25,000	25,000
	Sub-total	\$317,775
	Contingency	32,000

Engineering and inspection	32,000
Legal, Easements and Misc.	10,000
Base Cost Option 1	\$391,775

BASE COST, OPTION 2- Green Hills Rd Main Extension

1)	12" DIP Watermain, 3700 ft@ \$40/ft	\$148,000
2)	16" DIP Watermain, 1700 ft @ \$50/ft	85,000
3)	16" HDPE Directional Bore under Stoney Creek 375 ft @ \$225/ft.	84,375
4)	Fittings, 7500# @ \$5.00/#	37,500
5)	16" Gate Valves, 3 @ \$2000/ea	6,000
6)	12" Gate Valves, 2 @ \$1500	3,000
5)	Hydrants, 5 @ \$2800/ea	14,000
6)	6" Gate Valves, 5 @ \$1000/ea	5,000
7)	Pavement/Drive Repair, LS @ \$25,000	25,000
	Sub-total	\$377,875
	Contingency	38,000
	Engineering and inspection	38,000
	Legal, Easements and Misc.	10,000
	Base Cost Option 2	\$463,875

PETITION DISTRIBUTION LINES

x. Analysis and Cost Estimate: Ricks Plantation/Windsor Hall
This project would extend an 8" and 6" lines off of the 16" Oak
Level Road trunk main throughout both subdivisions.

BASE COST – Ricks Plantation/Windsor Hall Distribution

1)	8" DIP Watermain, 4300 ft @ \$30/ft	\$129,000
2)	6" DIP Watermain, 3120 ft @ \$25/ft	78,000
3)	Fittings, 10000# @ \$5.00/#	50,000
4)	8" Gate Valves, 3 @ \$1200/ea	3,600
5)	6" Gate Valves, 11 @ \$1000/ea	11,000
6)	Hydrants, 7 @ \$2800/ea	19,600
7)	Pavement/Drive Repair, LS @ \$30,000	30,000
8)	Taps, Services, Meter Boxes and Setters, 99@ \$1500/ea	\$148,500
	Sub-total	\$469,700
	Contingency	47,000
	Engineering and inspection	47,000
	Legal, Easements and Misc.	10,000
	Base Cost	\$573,770

xi. Analysis and Cost Estimate: Country Lane Acres. This project would extend a 6" line off of the 16" Oak Level Road trunk main throughout the subdivision.

BASE COST – Country Lane Acres Distribution

1)	6" DIP Watermain, 4050 ft @ \$25/ft	\$101,250
2)	Fittings, 5000# @ \$5.00/#	25,000
3)	6" Gate Valves, 7 @ \$1200/ea	8,400
4)	Hydrants, 4 @ \$2800/ea	11,200
7)	Pavement/Drive Repair, LS @ \$20,000	30,000
8)	Taps, Services, Meter Boxes and Setters, 31 @ \$1500/ea	\$148,500
	Sub-total	\$324,350
	Contingency	32,000
	Engineering and inspection	32,000
	Legal, Easements and Misc.	10,000
	Base Cost	\$398,350

xii. Analysis and Cost Estimate: Oak Level Crossing . This project would extend a 6" line off of the 16" Oak Level Road trunk main throughout the subdivision.

BASE COST – Oak Level Crossing Distribution

1)	6" DIP Watermain, 3375 ft @ \$25/ft	\$84,375
2)	Fittings, 4500# @ \$5.00/#	22,500
3)	6" Gate Valves, 9 @ \$1200/ea	10,800
4)	Hydrants, 5 @ \$2800/ea	14,000
7)	Pavement/Drive Repair, LS @ \$15,000	15,000
8)	Taps, Services, Meter Boxes and Setters, 46 @ \$1500/ea	69,500
	Sub-total	\$216,175
	Contingency	22,000
	Engineering and inspection	22,000
	Legal, Easements and Misc.	10,000
	Base Cost	\$268,175

xiii. Analysis and Cost Estimate: Barnshill Church Road . This project would extend an 8" line off of the 16" Oak Level Road trunk main south along Barnshill Church Road to all annexed properties.

BASE COST – Barnshill Church Road Distribution

1)	8" DIP Watermain, 1100 ft @ \$30/ft	\$33,000
2)	Fittings, 1500# @ \$5.00/#	7,500
3)	8" Gate Valves, 2 @ \$1200/ea	2,400

4)	6" Gate Valves, 2 @ \$1000/ea	2,000
4)	Hydrants, 2 @ \$2800/ea	5,600
7)	Pavement/Drive Repair, LS @ \$10,000	10,000
8)	Taps, Services, Meter Boxes and Setters, 15 @ \$1500/ea	22,500
	Sub-total	\$83,175
	Contingency	8,500
	Engineering and inspection	8,500
	Legal, Easements and Misc.	5,000
	Base Cost	\$105,175

xiv. Analysis and Cost Estimate: Benbrook Subdivision . This project would extend a 6" line off of the 16" Oak Level Road trunk main throughout the subdivision.

BASE COST- Benbrook Subdivision Distribution

1)	6" DIP Watermain, 6265 ft @ \$25/ft	\$156,625
2)	Fittings, 7500# @ \$5.00/#	37,500
3)	6" Gate Valves, 12 @ \$1200/ea	14,400
4)	Hydrants, 6 @ \$2800/ea	16,800
5)	Pavement/Drive Repair, LS @ \$30,000	30,000
6)	Taps, Services, Meter Boxes and Setters, 75 @ \$1500/ea	112,500
	Sub-total	\$367,825
	Contingency	37,000
	Engineering and inspection	37,000
	Legal, Easements and Misc.	15,000
	Base Cost	\$456,825

xv. Analysis and Cost Estimate: Old Spring Hope Road Main. This project would extend a 12" southwest line off of the 16" Oak Level Road trunk main to serve annexed properties off of Old Spring Hope Road and be in a position to serve future growth areas.

BASE COST- Old Spring Hope Road Main

1)	12" DIP Watermain, 2600 ft @ \$40/ft	\$104,000
2)	Fittings, 5000# @ \$5.00/#	25,000
3)	12" Gate Valves, 3 @ \$1500/ea	4,500
4)	6" Gate Valves, 4 @ \$1200/ea	14,400
5)	Hydrants, 3 @ \$2800/ea	8,400
6)	Pavement/Drive Repair, LS @ \$12,000	12,000
7)	Taps, Services, Meter Boxes and Setters, 12 @ \$1500/ea	18,000
	Sub-total	\$186,300
	Contingency	19,000
	Engineering and inspection	19,000

Legal, Easements and Misc.	5,000
Base Cost	\$229,300

- xvi. Analysis and Cost Estimate: Carriage Farm Remainder. This project would extend 8" lines into the northwest portion of the subdivision along Springhaven Rd and Spring Mill Trail to serve the remaining portion of Carriage Farm.

BASE COST- Carriage Farm Remainder

1)	8" DIP Watermain, 4150 ft @ \$30/ft	\$124,500
2)	Fittings, 6000# @ \$5.00/#	30,000
3)	8" Gate Valves, 3 @ \$1500/ea	4,500
3)	6" Gate Valves, 4 @ \$1200/ea	14,400
4)	Hydrants, 4 @ \$2800/ea	11,200
7)	Pavement/Drive Repair, LS @ \$25,000	25,000
8)	Taps, Services, Meter Boxes and Setters, 31 @ \$1500/ea	46,000
	Sub-total	\$255,600
	Contingency	26,000
	Engineering and inspection	26,000
	Legal, Easements and Misc.	10,000
	Base Cost	\$317,600

- xvii. Analysis and Cost Estimate: Carriage Trail. This project would extend 6" lines into the developed portion of the subdivision along Carriage Trail and Christina Lane.

* Note- trunk main as described in section i. must be constructed to provide water to this subdivision.

BASE COST- Carriage Trail Subdivision

1)	6" DIP Watermain, 2850 ft @ \$25/ft	\$71,250
2)	Fittings, 4000# @ \$5.00/#	20,000
3)	6" Gate Valves, 7 @ \$1000/ea	7,000
3)	Hydrants, 5 @ \$2800/ea	14,000
4)	Pavement/Drive Repair, LS @ \$15,000	15,000
5)	Taps, Services, Meter Boxes and Setters, 21 @ \$1500/ea	31,500
	Sub-total	\$158,750
	Contingency	16,000
	Engineering and inspection	16,000
	Legal, Easements and Misc.	10,000
	Base Cost	\$200,750

- 4.4 *Summary* – Below are the total costs associated with serving the area with trunk mains and distribution lines. They have been broken down by

subdivisions and areas to better understand the potential costs associated with providing every annexed lot with sewer service. Any recommendation below is based on construction cost, service area impacts and benefits and ability to meet future development needs if applicable.

- a. Trunk Mains that must be extended (*Note the Oak Level Watermain costs have been estimated as part of the CIP and construction scheduled to begin in FY12)

Oak Level Main Extension- \$3,043,000

OPTION 1 – Old Carriage Road Extension - \$391,775
(Recommended)

OPTION 2 – Green Hills Road Extension - \$463,874

TOTAL COST \$3,434,775

- b. Distribution lines that may be petitioned to be extended from the mains to subdivisions or individual lots

Ricks Plantation/Windsor Hall	\$573,770
Country Lane Acres	\$398,350
Oak Level Crossing	\$268,175
Barnshill Church Road	\$105,175
Benbrook Subdivision	\$456,825
S. Old Spring Hope Main	\$229,300
Carriage Farm Remainder	\$317,600
Carriage Trail Subdivision	\$200,750

TOTAL COST \$2,549,945

TOTAL POTENTIAL COST FOR WATER SERVICE WITHIN ANNEXATION AREA

Required Trunk Mains: \$3,434,775
Petition/Council Ordered Collectors: \$2,549,945
Total:\$5,984,720

DESIGN REPORT
ANNEXATION AREA 2
WEST BATTLEBORO AVENUE
CITY OF ROCKY MOUNT, NC
PREPARED BY ANTHONY MANCARI, P.E.
JULY, 2008

1.0 GENERAL:

Annexation Area 2 is located on the northwestern boundary of the city limits, along West Battleboro Avenue within the upper reaches of the Beech Branch tributary which drains to the Tar River.

2.0 ANNEXATION AREA 2:

Location/Legal Description: The following description of Annexation 2 is taken from the official GIS system of the City of Rocky Mount, NC.

BEGINNING at a point in the present Rocky Mount City Limits said point being on the southern right-of-way of W. Battleboro Avenue, having state plane coordinates of 840151.94, 2367667.25, thence S 21°44'49" W a distance of 195.68 feet; thence S 21°42'20" W a distance of 514.41 feet; thence S 89°29'50" W a distance of 116.67 feet; thence N 21°44'11" E a distance of 753.20 feet; thence N 69°17'30" W a distance of 197.01 feet; thence S 21°58'42" W a distance of 244.68 feet; thence N 71°55'45" W a distance of 237.92 feet; thence S 7°9'43" W a distance of 623.62 feet; thence S 89°30'50" W a distance of 184.26 feet; thence N 0°46'13" W a distance of 446.23 feet; thence S 89°6'11" W a distance of 135.77 feet; thence N 58°43'57" W a distance of 119.33 feet; thence N 58°35'50" W a distance of 113.35 feet; thence N 0°36'51" E a distance of 281.20 feet to a point on the southern right-of-way of W. Battleboro Avenue; thence with the southern right-of-way of W. Battleboro Avenue the following courses and distances S 87°32'12" E a distance of 100.34 feet; thence S 87°33'37" E a distance of 99.84 feet; thence S 87°33'26" E a distance of 126.11 feet; thence S 87°34'53" E a distance of 91.83 feet; thence S 87°23'21" E a distance of 198.96 feet; thence S 85°38'25" E a distance of 143.51 feet; thence N 11°13'14" E a distance of 58.80 feet a point on the northern right-of-way of W. Battleboro Avenue; thence N 7°7'32" E a distance of 273.84 feet; thence S 87°13'40" E a distance of 174.45 feet; thence S 87°13'37" E a distance of 288.09 feet; thence S 0°50'7" E a distance of 411.48 feet to a point on the northern right-of-way of W. Battleboro Avenue; thence N 69°6'50" W a distance of 58.73 feet; thence S 20°13'29" W a distance of 61.89 feet to a point on the southern right-of-way of W. Battleboro Avenue; thence S 68°19'7" E a distance of 5.67 feet; to the point and place of BEGINNING, containing 14.840 acres, more or less;

3.0 SEWER OUTFALLS

3.1 *Findings of Existing Sewer Service:* Annexation Area 2 is a small area with several parcels with existing residential improvements. An 8" gravity sewer ends at the eastern border of the annexation area. This 8" gravity

sewer, though shallow, is capable of providing sewer service to the annexed parcels.

3.2 *Sewer Service Availability:* The existing 8" gravity sewer has adequate capacity to serve these parcels; however due to topography sewer will have to be pumped to the existing 8" collector.

3.3 *Community Action for Sewer Service:* Property owners within Annexation Area 2 who desire sewer service will need to petition City Council for extension of sewer collection lines.

a. *Cost to City for Sewer Service to Annexation Area 2:*

The estimate of the probable construction cost for the various base and alternates is made on the basis of our experience and specific inquiries made to contractors and equipment suppliers in the region for this class of construction and equipment. The estimate of cost represents our best judgment as an experienced and qualified professional generally familiar with the construction industry. However, since we have no control over the cost of labor, materials, equipment or services furnished by others, or over a contractor's methods of determining prices, or over competitive bidding or market conditions, we must revise and or adjust the cost from time to time when actual construction is contemplated by the City Council.

i. Analysis and Cost Estimate: OPTION 1 Base Cost- W. Battleboro Ave Lift Station; Construct sewer pump station, gravity lines and forcemain approximately 80' west of edge of the proposed annexation area adjacent to Beech Branch. This station would be in a position to serve all of the annexed lots as well as additional areas within Nash County west of Beech Branch and would pump to the existing 8" collector. OPTION 2 Base Cost- Localized Grinder/Low Pressure Pump System; Construct 2" FM with individual grinder pumps at each residence pumping to the existing 8" collector.

BASE COST, OPTION 1- W. Battleboro Ave Lift Station

1)	4" x 4" CRM Standard Pump Station 1 @\$225,000 ea.	\$225,000
2)	8" Gravity Sewer (6-8'), 1200 ft. @ \$40/ft.	48,000
3)	Manholes, 5 @ \$2250/ea	11,250
4)	Service Lines and Taps, 8 @ \$1000/ea	8,000
5)	4" DIP FM, 1000 ft @ \$20/ft	20,000
6)	Pavement/Drive Repair LS @ \$5,000	5,000
	Sub-total	\$317,250
	Contingency	32,000

Engineering and inspection	32,000
Legal, Easements and Misc.	20,000
Base Cost Option 1	\$401,250

BASE COST, OPTION 2- Localized Low Pressure System

1) 2" PVC FM, 1000 ft @ \$10/ft	\$10,000
2) Misc. Fittings	4,000
3) Grinder Pump Station to include electrical, vault, piping and valves, 8@ \$5000 ea	40,000
4) Pavement/Drive Repair	2,500
Subtotal	\$57,500
Contingency	6,000
Engineering and Inspection	6,000
Legal, Easements and Misc.	2,500
Base Cost Option 2	\$72,000

3.4 *Summary* – Below are the total costs associated with serving the area with outfalls and collectors. Any recommendation below is based on construction cost, service area impacts and benefits and ability to meet future development needs if applicable.

- a. Outfalls that must be extended - \$0
- b. Collectors that may be petitioned to be extended from the existing outfalls/collectors to the individual lots

Option 1- W. Battleboro Avenue PS	\$401,250	
Option 2- Localized Grinder System	\$ 72,000	<u>Recommended</u>

TOTAL POTENTIAL COST FOR SEWER SERVICE WITHIN ANNEXATION AREA

Required Outfalls: \$0
Petition/Council Ordered Collectors: \$72,000
Total: \$72,000

4.0 TRUNK WATER MAINS

4.1 *Findings of Existing Water Service:* Annexation Area 2 is a small area with several parcels with existing residential improvements. A 2" watermain extends from the eastern border westward along W. Battleboro Ave approximately 650'.

4.2 *Water Service Availability:* The above mentioned existing 2” main has adequate water capacity to supply water to the annexed lots. However, the 2” main does not provide adequate fire protection to the far western boundary of the area nor does it allow for future service to the west.

4.3 *Community Action for Water Service:* Property owners within Annexation Area 2 who desire water service will need to petition City Council for extension of water distribution lines.

a. *Cost to City for Water Service to Annexation Area 2:*

The estimate of the probable construction cost for the various base and alternates is made on the basis of our experience and specific inquiries made to contractors and equipment suppliers in the region for this class of construction and equipment. The estimate of cost represents our best judgment as an experienced and qualified professional generally familiar with the construction industry. However, since we have no control over the cost of labor, materials, equipment or services furnished by others, or over a contractor’s methods of determining prices, or over competitive bidding or market conditions, we must revise and/or adjust the cost from time to time when actual construction is contemplated by the City Council.

PETITION DISTRIBUTION LINES

- i. Analysis and Cost Estimate: OPTION 1 Base Cost: West Battleboro Avenue 2” Main Extension; construct 2” watermain from the current terminus westward to the edge of the annexation area. OPTION 2 Base Cost: West Battleboro 6” Main Extension; remove and replace 2” line with 6” main and extend to western edge of annexation area. This main would be in a position to serve future growth to the west and provide fire protection to the annexation boundary.

OPTION 1 BASE COST – 2” Main Extension

1)	2” HDPE/PVC Watermain, 500 ft@\$10/ft	\$5,000
2)	Pavement/Drive Repair, LS @ \$1,000	1,000
3)	Taps, Services, Meter Boxes and Setters, 4@\$1500/ea	6,000
	Sub-total	\$12,000
	Contingency	1,500
	Engineering and inspection	1,500
	Legal, Easements and Misc.	500
	Base Cost Option 1	\$15,500

BASE COST, OPTION 2- 6” Extension

1)	6" DIP Watermain, 1220 ft@ \$25/ft	\$30,500
2)	Fittings, 1000# @ \$5.00/#	5,000
3)	Hydrants, 1 @ \$2800/ea	2,800
4)	6" Gate Valves, 2 @ \$1000/ea	2,000
5)	Pavement/Drive Repair, LS @ \$5,000	5,000
6)	Taps, Services, Meter Boxes and Setters, 8@ \$1500/ea	12,000
	Sub-total	\$57,300
	Contingency	6,000
	Engineering and inspection	6,000
	Legal, Easements and Misc.	1,000
	Base Cost Option 2	\$70,300

4.4 *Summary* – Below are the total costs associated with serving the area with distribution lines. Any recommendation below is based on construction cost, service area impacts and benefits and ability to meet future development needs if applicable.

- a. Mains that must be extended - \$0
- b. Distribution Lines that may be petitioned to be extended from the mains to lots

Option 1- 2" Main Extension	\$15,500 <u>Recommended</u>
Option 2- 6' Main Extension	\$70,300
TOTAL COST	\$15,500

TOTAL POTENTIAL COST FOR WATER SERVICE WITHIN ANNEXATION AREA

Required Trunk Mains: \$0
Petition/Council Ordered Distribution Lines: \$15,500
Total: \$15,500

DESIGN REPORT
ANNEXATION AREA 3
NC 97-EDGECOMBE COUNTY
CITY OF ROCKY MOUNT, NC
PREPARED BY ANTHONY MANCARI, P.E.
JULY, 2008

1.0 GENERAL:

Annexation Area 3 is located along the northern and southern sides NC97 in Edgecombe County, with it's southern boundary being the Tar River.

2.0 ANNEXATION AREA 3:

Location/Legal Description: The following description of Annexation 3 is taken from the official GIS system of the City of Rocky Mount, NC.

BEGINNING at a point in the present Rocky Mount City Limits said point being on the southern right-of-way of NC 97 West, having state plane coordinates of 812714.81, 2370117.00, thence S 68°6'4" E a distance of 102.47 feet; thence S 73°24'34" E a distance of 138.89 feet; thence S 80°10'53" E a distance of 137.33 feet; thence N 1°44'14" E a distance of 60.11 feet to a point on the northern right-of-way of NC 97 West; thence N 1°13'7" E a distance of 3099.70 feet; thence N 88°5'15" E a distance of 1724.98 feet; thence S 0°30'32" W a distance of 3098.29 feet; thence S 1°5'59" W a distance of 60.31 feet to a point on the southern right-of-way of NC 97 West; thence N 87°23'15" E a distance of 615.78 feet; thence S 1°12'47" E a distance of 1179.31 feet to a point on the northern high water mark of the Tar River; thence with the northern high water mark of the Tar River the following courses and distances; S 48°18'1" W a distance of 273.04 feet; thence S 46°14'43" W a distance of 195.45 feet; thence S 34°24'32" W a distance of 272.04 feet; thence S 33°15'15" W a distance of 283.71 feet; thence S 34°50'59" W a distance of 163.90 feet; thence S 49°29'15" W a distance of 284.64 feet; thence S 68°10'32" W a distance of 117.05 feet; thence S 53°26'13" W a distance of 74.28 feet; thence S 57°8'39" W a distance of 57.60 feet; thence S 39°25'2" W a distance of 47.47 feet; thence S 60°34'11" W a distance of 301.97 feet; thence S 81°27'35" W a distance of 380.44 feet; thence S 88°51'27" W a distance of 457.38 feet; thence S 81°54'16" W a distance of 64.31 feet; thence N 75°17'30" W a distance of 5.17 feet; thence N 88°25'36" W a distance of 132.34 feet; thence S 89°16'37" W a distance of 104.31 feet; thence S 88°42'39" W a distance of 75.42 feet; thence N 66°5'35" W a distance of 229.51 feet; thence N 59°13'58" W a distance of 299.30 feet; thence N 41°31'0" W a distance of 205.55 feet; thence N 32°26'24" W a distance of 248.84 feet; thence N 16°42'56" W a distance of 251.60 feet; thence N 4°14'40" E a distance of 164.68 feet; thence N 21°29'17" E a distance of 38.35 feet; thence N 10°16'22" E a distance of 241.53 feet; thence N 17°56'2" E a distance of 335.59 feet; thence N 13°37'2" E a distance of 264.28 feet; thence N 7°28'40" E a distance of 216.05 feet; thence N 6°28'34" W a distance of 178.30 feet to a point; thence leaving the northern high water mark of the Tar River and with the centerline of a un-named creek the following courses and distances S 90°0'0" E a distance of 43.00 feet; thence N 84°33'2" E a distance of 19.09 feet; thence S 85°19'39" E

a distance of 28.12 feet; thence S 80°14'51" E a distance of 24.39 feet; thence N 88°50'10" E a distance of 40.03 feet; thence N 81°47'0" E a distance of 29.33 feet; thence N 64°46'20" E a distance of 14.43 feet; thence N 55°0'28" E a distance of 24.50 feet; thence N 61°24'12" E a distance of 41.03 feet; thence N 73°11'28" E a distance of 25.09 feet; thence N 79°22'49" E a distance of 21.39 feet; thence N 66°32'16" E a distance of 19.64 feet; thence N 53°50'30" E a distance of 16.13 feet; thence N 62°46'39" E a distance of 29.26 feet; thence N 57°59'40" E a distance of 31.94 feet; thence N 45°59'36" E a distance of 15.36 feet; thence N 36°31'43" E a distance of 16.81 feet; thence N 18°21'48" E a distance of 47.67 feet; thence N 13°28'11" E a distance of 64.74 feet; thence N 18°6'29" E a distance of 45.11 feet; thence N 13°50'56" E a distance of 41.88 feet; thence N 10°14'52" E a distance of 22.48 feet; thence N 11°34'48" E a distance of 60.10 feet; thence N 42°20'21" E a distance of 22.61 feet to a point on the southern right-of-way of NC 97 West; the point and place of BEGINNING, containing 296.809 acres, more or less;

3.0 SEWER OUTFALLS

3.1 *Findings of Existing Sewer Service:* Annexation Area 3 is an area with several large parcels, small residential parcels and an existing mobile home park. The 54" Tar River Interceptor runs on the northside of NC97 and is capable of providing sewer service to the annexed parcels.

3.2 *Sewer Service Availability:* The existing 54" gravity sewer has adequate capacity to serve these parcels; however in order to reduce surcharging interference from the interceptor a local collection system may have to be constructed parallel to the 54" system and/or individual lots install privately maintained grinder systems.

3.3 *Community Action for Sewer Service:* Property owners within Annexation Area 3 who desire sewer service will need either make application for service or petition City Council for extension of sewer collection lines.

*Note: The mobile home park is a single lot of record and thus all sewer lines within there would have to be constructed with private funds and be operated and maintained privately. Due to topography, more than likely a pump station would have to be constructed for the park. The city would accept flow from this area.

a. *Cost to City for Sewer Service to Annexation Area 3:*

The only identified cost is for an 8" collector to be constructed on the north side of NC97 to serve the four individual parcels adjacent to the mobile home park.

The large tract to the south occupied by the quarry more than likely would have to install an individual grinder pump to pump to the outfall and would not be a City cost.

The estimate of the probable construction cost for the various base and alternates is made on the basis of our experience and specific inquiries made to contractors and equipment suppliers in the region for this class of construction and equipment. The estimate of cost represents our best judgment as an experienced and qualified professional generally familiar with the construction industry. However, since we have no control over the cost of labor, materials, equipment or services furnished by others, or over a contractor's methods of determining prices, or over competitive bidding or market conditions, we must revise and or adjust the cost from time to time when actual construction is contemplated by the City Council.

- i. Analysis and Cost Estimate: NC97 Localized Collector; construct 8" collector parallel to existing 54" interceptor at shallow enough grade to avoid any surcharging effects from the interceptor.

BASE COST

1)	8" Gravity Sewer (0-6'), 270 ft. @ \$35/ft.	\$9,450
2)	Manholes, 2@ \$2000/ea	4,000
3)	Service Lines and Taps, 4 @ \$1000/ea	4,000
4)	Pavement/Drive Repair LS @ \$5,000	4,000
	Sub-total	\$21,450
	Contingency	2,500
	Engineering and inspection	2,500
	Legal, Easements and Misc.	1,000
	Base Cost	\$27,450

3.4 *Summary* – Below are the total costs associated with serving the area with outfalls and collectors. Any recommendation below is based on construction cost, service area impacts and benefits and ability to meet future development needs if applicable.

- a. Outfalls that must be extended - \$0
- b. Collectors that may be petitioned to be extended from the existing outfalls/collectors to the individual lots

NC97 localized collector \$27,450

TOTAL POTENTIAL COST FOR SEWER SERVICE WITHIN ANNEXATION AREA

Required Outfalls: \$0

Petition/Council Ordered Collectors: \$27,450

Total: \$27,450

4.0 TRUNK WATER MAINS

4.1 *Findings of Existing Water Service:* Annexation Area 3 is an area with several large parcels, small residential parcels and an existing mobile home park. An 8" DIP runs on the northside of NC97 and is capable of providing water service to the annexed parcels. A 6" watermain runs on the southside but serves only the Tar River Regional Wastewater Facility. No other connections can be made to this line.

4.2 *Water Service Availability:* The above mentioned existing 8" main has adequate water capacity to supply water to the annexed lots. As with the sewer, the waterlines within the trailer park would be privately funded and maintained. A hydraulic analysis would have to be done if the trailer park requested to tie into the city's main to ensure adequate pressures could be maintained during fire emergencies.

4.3 *Community Action for Water Service:* Property owners within Annexation Area 3 (outside of the mobile home park) who desire water service will need to make application for water service on the 8" main.

a. *Cost to City for Water Service to Annexation Area 3:*

NO COST

DESIGN REPORT
ANNEXATION AREA 4
MEADOWBROOK/BRAKE RD
CITY OF ROCKY MOUNT, NC
PREPARED BY ANTHONY MANCARI, P.E.
JULY, 2008

1.0 GENERAL:

Annexation Area 4 is located on the southwestern boundary of the city limits, along Meadowbrook Road, Brake Road and Brake Loop within the upper reaches of an unnamed tributary of the Tar River.

2.0 ANNEXATION AREA 4:

Location/Legal Description: The following description of Annexation 4 is taken from the official GIS system of the City of Rocky Mount, NC.

BEGINNING at a point in the present Rocky Mount City Limits said point being at the intersection of the northern right-of-way of Meadowbrook Road and the eastern right-of-way of Lewy Lane, having state plane coordinates of 796557.63, 2373109.00 thence N 88°11'38" E a distance of 111.06 feet; thence N 89°3'46" E a distance of 107.01 feet; thence N 88°56'55" E a distance of 109.02 feet; thence N 89°14'14" E a distance of 107.76 feet; thence N 89°34'58" E a distance of 270.76 feet; thence S 4°29'40" W a distance of 444.02 feet; thence S 4°29'10" W a distance of 28.08 feet to a point on the northern right-of-way of Meadowbrook Road; thence crossing Meadowbrook Road S 5°47'34" W a distance of 91.19 feet; thence S 36°14'31" E a distance of 126.75 feet; thence S 40°3'21" E a distance of 102.59 feet; thence S 45°40'45" E a distance of 67.11 feet to a point on the western right-of-way of Brake Rd; thence crossing Brake Road S 49°41'9" E a distance of 63.95 feet; thence S 52°47'29" E a distance of 58.15 feet; thence S 58°3'48" E a distance of 88.43 feet; thence S 61°12'49" E a distance of 76.48 feet; thence S 66°37'33" E a distance of 64.33 feet to a point on the western right-of-way of Brake Loop Road; thence with the western right-of-way of Brake Loop Road the following courses and distances S 16°30'40" W a distance of 147.78 feet; thence S 23°25'33" W a distance of 78.82 feet; thence S 33°22'31" W a distance of 56.92 feet; thence S 35°6'19" W a distance of 98.26 feet; thence S 33°58'12" W a distance of 99.33 feet; thence S 34°10'5" W a distance of 99.71 feet; thence leaving the western right-of-way of Brake Loop Road N 55°54'44" W a distance of 199.84 feet; thence S 33°5'8" W a distance of 111.74 feet; thence S 33°14'11" W a distance of 21.89 feet; thence S 31°56'47" W a distance of 77.49 feet; thence N 56°12'18" W a distance of 227.43 feet to a point on the southern right-of-way of Brake Road; thence with the southern right-of-way of Brake Road N 35°19'52" E a distance of 60.54 feet; thence N 39°52'24" E a distance of 40.56 feet; thence N 41°24'31" E a distance of 21.17 feet; thence crossing Brake Road N 47°47'37" W a distance of 60.75 feet; thence N 50°31'54" W a distance of 111.40 feet; thence N 4°16'17" W a distance of 120.84 feet; thence S 86°27'11" W a distance of 60.62 feet; thence N 27°29'44" E a distance of 103.71 feet; thence N 18°22'26" E a distance of 165.41 feet; thence N 43°14'37" E a distance of 101.97 feet; thence N 37°15'46" E a

distance of 57.97 feet; thence N 56°48'8" W a distance of 48.95 feet; thence N 14°54'9" E a distance of 130.17 feet; thence N 83°26'34" E a distance of 49.31 feet; thence N 14°25'14" E a distance of 54.83 feet; thence N 34°16'2" W a distance of 55.69 feet; thence N 38°14'25" E a distance of 76.42 feet to a point on the southern right-of-way of Meadowbrook Road; thence crossing Meadowbrook Road N 36°51'56" E a distance of 63.66 feet; thence with the northern right-of-way of Meadowbrook Road the following courses and distances N 43°5'7" W a distance of 117.04 feet; thence N 49°0'28" W a distance of 118.35 feet; thence N 53°51'45" W a distance of 74.33 feet; thence N 59°19'32" W a distance of 121.03 feet; thence N 67°39'59" W a distance of 96.29 feet; thence N 72°53'12" W a distance of 99.48 feet; thence N 80°7'5" W a distance of 75.68 feet; to the point and place of BEGINNING, containing 14.622 acres, more or less;

3.0 SEWER OUTFALLS

- 3.1 *Findings of Existing Sewer Service:* Annexation Area 4 is a residential area with several wooded lots. A 12" gravity sewer along Meadowbrook Rd approximately 1550 feet from the western boundary of the annexation area is in a position to serve the annexed area.
- 3.2 *Sewer Service Availability:* The existing 12" gravity sewer has adequate capacity to serve these parcels and is a position to serve surrounding residential parcels currently within the city.
- 3.3 *Community Action for Sewer Service:* Property owners within Annexation Area 4 who desire sewer service will need to petition City Council for extension of sewer collection lines.

- a. *Cost to City for Sewer Service to Annexation Area 4:*

The following costs reflect the anticipated necessary improvements associated with different areas/developments within the annexation area. Though the above mentioned 12" outfall provides the main and trunk-line availability for these areas to be served via petitions, there are significant costs associated with serving all parcels within the annexation area. It will be at the discretion of City Council to determine whether to wait for petition requests to install these improvements or program them to be installed independent of any petition requests.

The estimate of the probable construction cost for the various base and alternates is made on the basis of our experience and specific inquiries made to contractors and equipment suppliers in the region for this class of construction and equipment. The estimate of cost represents our best judgment as an experienced and qualified professional generally familiar with the construction industry. However, since we have no control over the cost of labor, materials, equipment or services furnished by others, or over a contractor's methods of determining prices, or over competitive

bidding or market conditions, we must revise and or adjust the cost from time to time when actual construction is contemplated by the City Council.

Options (if provided) have been identified as different means to provide service(s) to an area and are followed by a recommendation.

Base Costs indicate the minimal amount of work needed to be done in order to serve or assist in serving surrounding areas.

Alternates have been identified as work that is in addition to the base costs that is necessary to serve every annexed lot within an area.

Example: A sewer pump station (option 1 base cost) or outfall (option 2 base cost) must be built before any subdivisions (alternates) can be built. Not every alternate has to be built but the base, regardless of the number of alternates, must be constructed prior to committing to the construction of an alternate.

TOTAL PETITION COSTS

i. Analysis and Cost Estimate: Base Cost: Meadowbrook Road Lift Station; Construct sewer pump station on West Edgecombe County Rescue, gravity lines and forcemain along Meadowbrook Road to the boundaries of the annexation area. This station would be in a position to serve Brake Road and Brake Loop Road within the annexation area and areas further east and west along Meadowbrook Road to include Lewy Lane. Alternate 1 reflects the anticipated costs to provide gravity sewer to the annexed lots along Brake Road. Alternate 2 reflects the anticipated costs to provide gravity sewer to the annexed lots along Brake Loop Road.

BASE COST- Meadowbrook Road Pump Station

1)	4" x 4" CRM Standard Pump Station 1 @\$225,000 ea.	\$225,000
2)	8" Gravity Sewer (6-8), 950 ft @ \$40/ft.	38,000
3)	10" Gravity Sewer (10-12), 575 ft @ \$50/ft.	28,750
4)	Manholes, 3 @ \$2500/ea	7,500
5)	Manholes, 3 @ \$2250	6,750
6)	4" FM, 2500 ft @ \$20/ft	50,000
7)	Service Taps and Lines, 4 lots @ \$1,000/lot	4,000
	Sub-total	\$360,000
	Contingency	36,000
	Engineering and inspection	36,000
	Legal, Easements and Misc.	20,000
	Base Cost	\$452,000

ALTERNATE 1 – Brake Road Collector

1)	8" Gravity Sewer (6-8'), 720 ft @ \$40/ft	\$28,800
2)	Manholes, 2 (6-8') @ \$2250 ea	4,500
3)	16" Steel Encasement, Bore and Jack under Meadowbrook Road, 70' @ \$200/ft	14,000
4)	Service Taps and Lines, 10 lots @ \$1,000/lot	10,000
5)	Pavement/Drive Repair, LS @ \$10,000	10,000
	Subtotal	\$67,300
	Contingency	7,000
	Engineering and Inspection	7,000
	Legal, Easements and Misc.	7,000
	Alternate 1 Cost	\$88,300

ALTERNATE 2 – Brake Loop Road Collector

1)	8" Gravity Sewer (6-8'), 550 ft @ \$40/ft	\$22,000
2)	Manholes, 2 (6-8') @ \$2250 ea	4,500
3)	16" Steel Encasement, Bore and Jack under Meadowbrook Road, 70' @ \$200/ft	14,000
4)	Service Taps and Lines, 5 lots @ \$1,000/lot	5,000
5)	Pavement/Drive Repair, LS @ \$10,000	10,000
	Subtotal	\$55,500
	Contingency	6,000
	Engineering and Inspection	6,000
	Legal, Easements and Misc.	6,000
	Alternate 2 Cost	\$73,500

3.4 *Summary* – Below are the total costs associated with serving the area with outfalls and collectors. Any recommendation below is based on construction cost, service area impacts and benefits and ability to meet future development needs if applicable.

- a. Outfalls that must be extended - \$0
- b. Collectors that may be petitioned to be extended from the existing outfalls/collectors to the individual lots

Base Cost- Meadowbrook Road PS	\$452,000
Alternate 1 – Brake Road Collector	\$83,300 88,300
Alternate 2- Brake Loop Road Collector	\$73,500
TOTAL COST	\$608,800 613,800

TOTAL POTENTIAL COST FOR SEWER SERVICE WITHIN

ANNEXATION AREA

Required Outfalls: \$0

Petition/Council Ordered Collectors: \$608,800

Total:\$608,800

4.0 TRUNK WATER MAINS

- 4.1 *Findings of Existing Water Service:* Annexation Area 4 is a residential area with several wooded lots. A 12" DIP watermain sewer along Meadowbrook Rd ending at the intersection of Lewy Lane at the western boundary of the annexation area is in a position to serve the annexed area.
- 4.2 *Water Service Availability:* The above mentioned existing 12" main has adequate water capacity to supply water to the annexed lots.
- 4.3 *Community Action for Water Service:* Property owners within Annexation Area 2 who desire water service will need to petition City Council for extension of water distribution lines.

a. *Cost to City for Water Service to Annexation Area 4:*

The following costs reflect the anticipated necessary improvements associated with different areas/developments within the annexation area. Though the above mentioned 12" watermain provides the main and trunk-line availability for these areas to be served via petitions, there are significant costs associated with serving all parcels within the annexation area. It will be at the discretion of City Council to determine whether to wait for petition requests to install these improvements or program them to be installed independent of any petition requests.

The estimate of the probable construction cost for the various base and alternates is made on the basis of our experience and specific inquiries made to contractors and equipment suppliers in the region for this class of construction and equipment. The estimate of cost represents our best judgment as an experienced and qualified professional generally familiar with the construction industry. However, since we have no control over the cost of labor, materials, equipment or services furnished by others, or over a contractor's methods of determining prices, or over competitive bidding or market conditions, we must revise and or adjust the cost from time to time when actual construction is contemplated by the City Council.

PETITION DISTRIBUTION LINES

- i. Analysis and Cost Estimate: Base Cost-Meadowbrook Main Extension: Construct 12" main from the current terminus along Meadowbrook Road to the eastern boundary of the annexation area. Alternate 1 reflects the cost to extend an 8" DIP main to serve all the lots within the annexation area and be in a position to serve future growth south. Alternate 2 reflects the cost to extend a 6" DIP main along Brake Loop road.

BASE COST – 12" Main Extension

1)	12" DIP Watermain, 1400 ft@ \$40/ft	\$56,000
2)	12" HDPE Direction Bore under Creek, 100 feet @ \$175/ft	17,500
3)	8" Stub to Brake Road, 75' @ \$30/ft	2,250
4)	6" Stub to Brake Loop Road, 75' @ \$25/ft	1,875
5)	16" Steel Encasement, Bore and Jack under Meadowbrook Road, 2@70' @ \$200/ft	28,000
6)	Fittings, 3500# @ \$5.00/#	15,000
7)	12" Gate Valves, 4 @ \$1500/ea	6,000
8)	8" Gate Valves, 2@ \$1200/ea	2,400
9)	6" Gate, 4 @ \$1000/ea	4,000
10)	Hydrants, 2 @ \$2800/ea	5,600
11)	Pavement/Drive Repair, LS @ \$5,000	10,000
12)	Taps, Services, Meter Boxes and Setters, 3@ \$1500/ea	4,500
	Sub-total	\$153,125
	Contingency	15,000
	Engineering and inspection	15,000
	Legal, Easements and Misc.	7,500
	Base Cost	\$190,625

ALTERNATE 1 – Brake Road 8" Extension

1)	8" DIP Watermain, 720 ft@ \$30/ft	\$21,600
2)	Fittings, 1000# @ \$5.00/#	5,000
3)	Hydrants, 1 @ \$2800/ea	2,800
4)	8" Gate Valves, 2 @ \$1200/ea	1,200
4)	6" Gate Valves, 2 @ \$1000/ea	2,000
5)	Pavement/Drive Repair, LS @ \$5,000	5,000
6)	Taps, Services, Meter Boxes and Setters, 8@ \$1500/ea	12,000
	Sub-total	\$58,500
	Contingency	6,000
	Engineering and inspection	6,000
	Legal, Easements and Misc.	1,000
	Alternate 1 Cost	\$71,500

ALTERNATE 2 – Brake Loop Road 6” Extension

1)	6” DIP Watermain, 575 ft@ \$25/ft	\$14,375
2)	Fittings, 1000# @ \$5.00/#	5,000
3)	Hydrants, 1 @ \$2800/ea	2,800
4)	6” Gate Valves, 2 @ \$1000/ea	2,000
5)	Pavement/Drive Repair, LS @ \$4,000	4,000
6)	Taps, Services, Meter Boxes and Setters, 5@ \$1500/ea	7,500
	Sub-total	\$35,675
	Contingency	4,000
	Engineering and inspection	4,000
	Legal, Easements and Misc.	1,000
	Alternate 2 Cost	\$44,675

4.4 *Summary* – Below are the total costs associated with serving the area with distribution lines. Any recommendation below is based on construction cost, service area impacts and benefits and ability to meet future development needs if applicable.

- a. Trunk Mains that must be extended - \$0
- b. Distribution lines that may be petitioned to be extended from the mains to annexed lots

Meadowbrook Main Extension	\$190,625
Brake Road Extension	\$71,500
Brake Loop Road Extension	\$44,675

TOTAL COST \$306,800

TOTAL POTENTIAL COST FOR WATER SERVICE WITHIN
ANNEXATION AREA

Required Trunk Mains: \$0
 Petition/Council Ordered Distribution Lines: \$306,800
 Total: \$306,800

DESIGN REPORT
ANNEXATION AREA 5
ARLINGTON STREET
CITY OF ROCKY MOUNT, NC
PREPARED BY ANTHONY MANCARI, P.E.
JULY, 2008

1.0 GENERAL:

Annexation Area 5 is along Arlington Street at the southern boundary of the city limits within the upper reach of an unnamed tributary of the Tar River.

2.0 ANNEXATION AREA 5:

Location/Legal Description: The following description of Annexation 5 is taken from the official GIS system of the City of Rocky Mount, NC.

BEGINNING, at a point in the present Rocky Mount City Limits said point being on the western right-of-way of Arlington Street having state plane coordinates of 782970.62, 2352385.00, thence crossing Arlington Street S 82°33'44" E a distance of 60.91 feet to the eastern right-of-way of Arlington Street; thence with the eastern right-of-way of Arlington Street the following courses and distances N 14°8'49" E a distance of 109.00 feet; thence N 13°24'53" E a distance of 103.59 feet; thence N 13°54'55" E a distance of 99.94 feet; thence N 13°28'55" E a distance of 94.39 feet; thence N 13°40'47" E a distance of 101.62 feet; thence S 88°43'18" E a distance of 549.00 feet; thence S 1°42'27" E a distance of 100.67 feet; thence S 1°11'19" E a distance of 96.40 feet; thence S 1°47'6" E a distance of 96.30 feet; thence S 1°40'50" E a distance of 102.29 feet; thence S 1°43'6" E a distance of 100.04 feet; thence S 1°56'21" E a distance of 359.00 feet; thence N 89°9'43" W a distance of 357.00 feet; thence N 89°11'25" W a distance of 424.70 feet the eastern right-of-way of Arlington Street; thence crossing Arlington Street N 89°56'3" W a distance of 61.69 feet; thence S 13°7'29" W a distance of 121.25 feet; thence N 87°56'7" W a distance of 294.51 feet; thence N 87°56'7" W a distance of 709.46 feet; thence N 18°12'46" E a distance of 497.61 feet; thence S 88°42'45" E a distance of 962.72 feet; to the point and place of BEGINNING, containing 24.512 acres, more or less;

3.0 SEWER OUTFALLS

3.1 *Findings of Existing Sewer Service:* Annexation Area 5 contains residential lots and two mobile home park within an rural area of town. A 12" gravity sewer runs along Arlington Street and an 8" gravity sewer runs within the Arlington Court Park. Though the sewer line is owned and operated by the City of Rocky Mount, sewer customers within this area are Edgecombe County customers. Edgecombe County pays the City of Rocky Mount for wholesale sewer service based on the water meter readings.

3.2 *Sewer Service Availability:* The existing 12" gravity sewer has adequate capacity to serve these parcels not currently on city sewer to include the Edgewood Mobile Home Park on the east side of Arlington Street.

3.3 *Community Action for Sewer Service:* Property owners along Arlington Street within Annexation Area 5 who desire sewer service will need make application for sewer service. All residents within Arlington Court Park are currently connected to sewer. Residents within Edgewood Mobile Home Park will need to construct a private sewer collection system within the park and tie on to the 12" gravity main at the Arlington Street right-of-way.

a. *Cost to City for Sewer Service to Annexation Area 5:*

No Cost for City, sewer line is adjacent to every lot of record

4.0 TRUNK WATER MAINS

4.1 *Findings of Existing Water Service:* Annexation Area 4 is a residential area with several wooded lots. A 6" DIP watermain (owned and operated by Edgecombe County) runs from the Arlington Street/E. Tarboro Rd intersection north to approximately 250 south of Vestal Road. A 6" watermain runs within the Arlington Court Park and a 3" main runs within the Edgewood Mobile Home Park.

4.2 *Water Service Availability:* The above mentioned existing 6" main has adequate water capacity to supply water to the annexed lots along Arlington Street. The 6" main within Arlington Court Park serves individual homes within the park and each tenant is billed based on individual metered usage. The 3" main within Edgewood Mobile Home Park is master metered at the right-of-way and the mobile home owner pays for the park's metered usage.

4.3 *Community Action for Water Service:* Property owners along Arlington Street who are not already water customers will need to make application for water service. All residents within Arlington Court Park are already water customers to Edgecombe County and will become City of Rocky Mount customers. Edgewood Mobile Home Park can continue to be master metered but will be a City of Rocky Mount customer.

a. *Cost to City for Water Service to Annexation Area 5:*

Though the entire area is served by a combination of City of Rocky Mount sewer and Edgecombe County water, there are costs associated with transferring water over to City of Rocky Mount to include incidental extensions, meter transfers and water main separation. This work must be performed or an agreement made to the effect which

transfers obligation of providing water to the annexation area from Edgecombe County to the City of Rocky Mount.

The estimate of the probable construction cost for the various base and alternates is made on the basis of our experience and specific inquiries made to contractors and equipment suppliers in the region for this class of construction and equipment. The estimate of cost represents our best judgment as an experienced and qualified professional generally familiar with the construction industry. However, since we have no control over the cost of labor, materials, equipment or services furnished by others, or over a contractor's methods of determining prices, or over competitive bidding or market conditions, we must revise and or adjust the cost from time to time when actual construction is contemplated by the City Council.

- i. Analysis and Cost Estimate: Base Cost-Arlington Road transfer to Rocky Mount; This reflects the cost to connect the existing City of Rocky Mount 12" stub south of Vestal Road to the existing Edgecombe County 6" main. This main would then become property of the City (depreciated cost is estimated for this portion of line). In addition, the existing Edgecombe County watermain along Arlington Street would be disconnected south of the annexation area in order to separate the two water systems and all water customers north of the new separated main will be CRM customers even if they remain within the county. Costs also reflect the need for hydrants to be installed for both fire protection and end of line treatment. CRM water meters to be installed to replace every existing Edgecombe County water meter.

BASE COST – Arlington Street Transfer

1)	6" DIP Watermain, 100 ft@ \$25/ft	\$2500
2)	12" x 6" Reducer, 1 ea@ \$1000/ea	1,000
3)	6"x6" TS&V (for hydrants) 2ea@ \$1800/ea	3,600
4)	Cut/Plug and Block 6" Line 2ea@ \$1,500/ea	3,000
5)	Hydrants, 4ea@ \$2800/ea	11,200
6)	Pavement/Drive Repair, LS @ \$7,500	7,500
	Sub-total	\$28,800
	Contingency	3,000
	Engineering and inspection	3,000
	Legal, Easements and Misc.	500
	Meter Replacement, 50ea @ \$200/ea	10,000
	6" Line Compensation, 4700ft@ \$7.50/ft	35,200
	Base Cost	\$80,550

4.4 *Summary* – Below are the total costs associated with serving the area with distribution lines. Any recommendation below is based on construction cost, service area impacts and benefits and ability to meet future development needs if applicable.

- a. Trunk Mains that must be extended - \$0
- b. Distribution Lines that may be petitioned to be extended from the mains to annexed lots -\$0
- c. Miscellaneous line work and administrative transfer costs for existing lines - \$80,550 (REQUIRED)

TOTAL POTENTIAL COST FOR WATER SERVICE WITHIN
ANNEXATION AREA

Required Trunk Mains: \$0

Required Water Transfer: \$80,550

Petition/Council Ordered Distribution Lines: \$0

Total:\$80,550